CHEMICALS USED IN *Food Processing*

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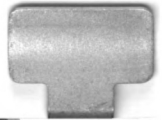

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Food Protection Committee

Food and Nutrition Board

National Academy of Sciences—National Research Council

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FOREWORD

The information contained in this publication was compiled by the Food Technology Subcommittee of the Food Protection Committee. The cooperation of many industrial concerns and trade associations made possible the compilation and is gratefully acknowledged. The help of the FPC Liaison Panel and Industry Committee is particularly appreciated. Special acknowledgment is owed to Dr. Willard B. Robinson for the time and effort he devoted to compiling this report and bringing it to publication and to Dr. R. L. Hall for his assistance in compiling the information on flavoring materials.

Much of the material in this publication has appeared in two previous publications of the National Research Council: Number 398, "The Use of Chemical Additives in Food Processing," and Number 887, "The Use of Chemicals in Food Production, Processing, Storage, and Distribution."

The inclusion of chemicals and reported levels of use in the list of food additives in this publication does not imply the approval or disapproval of the National Academy of Sciences—National Research Council. The purpose of the Food Protection Committee is to list all the chemicals about which the Committee has found authentic evidence of use.

The legal status of many of these food chemicals is subject to change. Thus, although data from regulatory agencies were used as source material, no attempt is made to provide a guide to official regulations. Chemicals listed in this compilation should not be used without consideration of currently applicable regulations.

INTRODUCTION

The American people have available the most abundant and varied food supply of any nation in history. This has been brought about in part by the application of science to food production and food technology.

Many technological advances in food production have entailed the use of chemicals. Public awareness of these developments has focused attention on the number and kinds of chemicals that enter the food supply during production, processing, and storage. Statements that large numbers of chemicals are used in foods are uninformative or even misleading. It is necessary to know what the chemicals are, the extent to which they are used, and the foods to which they are added.

The Food Protection Committee of the National Research Council has made a study of the use of chemicals in foods for the purpose of evaluating the technological benefits arising from such use and of appraising the significance of associated public health problems. This report deals only with the extent of use and technological reasons for use of chemicals used in food processing.

A survey of the food and chemical industries has been conducted by the Committee to ascertain the identity and quantities of chemicals used in food processing. In addition to the replies from the food and chemical industries, the definitions and standards for processed foods and the food-additives status lists published by the Food and Drug Administration and the regulations for meat products and fats published by the Meat Inspection Division of the Department of Agriculture have been used as source material.

The resulting lists tabulate chemicals used in processed foods. It is recognized that these lists are subject to several limitations in their interpretation: (1) they may contain additives permitted by regulations but not in actual use; (2) an additive may be used seasonally or by some segments of an industry but not by others; (3) amounts given may represent maximum usage rather than actual usage and, thus, do not permit reliable quantitative estimation of consumption; (4) changes in the lists are constantly occurring.

Chemicals Naturally in Foods

All components of food are chemicals. The great bulk of foods is comprised of chemicals classified as carbohydrates, fats, proteins, minerals, and water. Foods also contain small amounts of accessory chemicals including the vitamins and natural antioxidants, antimycotics, buffers, thickeners, emulsifiers, chelating agents, colors, and flavors.

The carbohydrates consist of various sugars, starches, dextrins, celluloses, and gums. These, except celluloses and gums, are oxidized in the body to release energy for muscular activity and other body functions. The fats and oils supply energy and essential fatty acids and facilitate absorption of fat-soluble vitamins. The proteins are composed of amino acids that are used as building materials for the proteins of soft tissues of the body and bone matrix or as a source of energy. Minerals have many functions. Some are used primarily in building skeletal structures and teeth, while others are essential aids in metabolism. The various vitamins regulate cell functions and are also essential to normal metabolism. The colors and flavor-imparting compounds may have nutrient value but most frequently are primarily of esthetic value. Such factors as the variety of crop; soil fertility and nutrient content; duration and intensity of sunlight during growth; rainfall; disease; and methods of harvest, handling, and storage may affect the chemical composition and hence the flavor, quality, and nutritional value of plant products. Chemical composition of animal products is also influenced to some extent by environmental factors and, particularly, by species.

Each foodstuff consists of chemicals that are more or less characteristic of it, but because of the natural variation, it is frequently necessary to adjust the composition in order to provide a product of constant quality. Milk, for example, consists of variable amounts of butterfat, milk sugar (lactose), proteins (principally casein and lactalbumin), minerals (notably calcium and phosphorus), various vitamins, and other constituents. The composition of milk varies somewhat according to the breed, the individual cow, the period of lactation, and the nature of the feed of the cow. Milk from Holstein cows is somewhat lower in fat and carotenoid pigments than that of either Jersey or Guernsey cows. Milk destined for general distribution comes from different sources and is generally blended or standardized to a uniform level of butterfat. Milk received at evaporating plants at different seasons and from different herds varies in stability to heat. Heat stability is dependent upon the balance in the milk of the natural mineral salts, particularly the proportions of calcium, phosphate, and citrate. It is often necessary, therefore, to add one or another of these chemicals in order to produce sufficient heat stability for an acceptable product. This is a case of adding a constituent normal to a food in order to standardize the composition of the foodstuff.

Standardization procedures comparable to those described for milk are carried out with other foods, as, for example, in the blending of wheat varieties to secure a flour of uniform baking quality.

It is appropriate to draw attention to the fact that natural foodstuffs contain substances that are of no known nutritive value and substances

that are harmful if taken in amounts much larger than those encountered in normal usage of the food. Coffee, for example, contains caffeine; and tea and cocoa contain caffeine and related compounds, all of which have a well-known pharmacological effect. Small amounts of arsenic and other toxic metals are found in most foodstuffs. Substances that interfere with thyroid function, resulting in development of goitre, have been identified in rutabagas and other species of the genus Brassica; and oxalates are present in rhubarb, spinach, and chard. Many foodstuffs contain traces of toxic alkaloids and cyanide-generating compounds. We accept these foods, however, since long usage has indicated that the substances in question are apparently inconsequential in the amounts likely to be consumed.

What Is a Food Additive?

In addition to the natural chemical composition of foodstuffs, chemicals may be incorporated, either directly or indirectly, during the growing, storage, or processing of foods. These chemicals may be described for convenience as "food additives."[1] When they are purposely introduced to aid in processing or to preserve or improve the quality of the product, they are called intentional additives. Such materials as colors, flavors, sweeteners, vitamins and minerals for enrichment, mold inhibitors, bactericides, antioxidants, and emulsifiers are intentional additives. They are added to the food product in carefully controlled amounts during processing, and the amounts necessary to achieve the desired effect are usually very small. For example, less than 4 grams of synthetic color per person per year are used for coloring our foods.

Common Types of Intentional Food Additives

Every chemical used in food processing should serve one or more of these purposes: improve nutritional value, enhance quality or consumer acceptability, improve the keeping quality, make the food more readily available, or facilitate its preparation. The purpose of intentional additives and the technological benefits of their use can be best illustrated by considering the more important classes of these substances.

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[1]Throughout this report the term "food additive" is used as defined by the Food Protection Committee: A food additive is a substance or a mixture of substances, other than a basic foodstuff, which is present in a food as a result of any aspect of production, processing, storage, or packaging. The term does not include chance contaminants. This definition differs from the legal definition.

Acids, Alkalies, Buffers, and Neutralizing Agents

The degree of acidity or alkalinity is a very important property of many processed foods. In the baking industry, chemical leavening agents are used to produce carbon dioxide, which makes the batter light and porous, thereby providing a finished product of good volume, crumb texture, and palatability. This reaction requires an ingredient that acts as an acid in the presence of moisture or heat. The acid ingredients used are such compounds as potassium acid tartrate, sodium aluminum phosphate, tartaric acid, monocalcium phosphate, and sodium acid pyrophosphate. Sodium bicarbonate is the gas-producing substance normally used, although ammonium carbonate and ammonium bicarbonate are employed in the commercial production of some cookies and crackers.

The tart taste of soft drinks other than those of the cola type is imparted by the addition of organic acids from either natural or synthetic sources. Citric acid (a component of citrus fruits), malic acid (a component of apples), and tartaric acid (a component of grapes) are the major organic acids employed. Buffering agents, generally the sodium salts of these acids, are frequently used to control the degree of acidity in soft drinks. The concentrations of acids and buffers employed are essentially the same as the levels at which these substances occur naturally in fruits. In cola-type beverages the most commonly used acidulant is phosphoric acid.

Adjustment of acidity is necessary in the production and use of several dairy products: for example, the excessive acidity that may develop in cream must be neutralized for satisfactory churning and to produce a butter of acceptable flavor and keeping quality. Emulsification and a desired tartness in process cheese and cheese spreads are obtained by the addition of acids such as citric, lactic, malic, tartaric, and phosphoric. Acids are used also as flavoring agents in confections, and alkalies may be employed in the processing of chocolate.

Bleaching and Maturing Agents, Bread Improvers

Wheat flour in its natural, freshly milled state has a pale yellowish tint. Upon storage flour slowly becomes white and undergoes an aging process that improves its baking qualities. About 50 years ago it was discovered that certain oxidizing agents added to the flour in small amounts would markedly accelerate this process, thus reducing storage costs and the hazards of spoilage and of insect and rodent infestation. Some of the permitted compounds, e.g., benzoyl peroxide, exert only a bleaching action and are without influence on baking properties. Others, such as the oxides of nitrogen, chlorine dioxide, nitrosyl chloride, and chlorine, have both bleaching and maturing or improving properties.

Bread improvers used by the baking industry contain small amounts of oxidizing substances such as potassium bromate, potassium iodate, and calcium peroxide. They also contain inorganic salts, e.g., ammonium chloride, ammonium sulfate, calcium sulfate, and ammonium and calcium phosphates, which serve as yeast food and dough conditioners. The quantity of oxidizing substances required is small, and since excessive treatment results in an inferior product, their use is self-limiting. Bleaching agents may also be used in the preparation of other foods, such as certain cheeses, in order to improve the appearance of the finished product.

Emulsifying, Stabilizing, and Thickening Agents

Emulsifying agents are used in baked goods, cake mixes, ice cream, frozen desserts, and confectionery products. Some of those used are lecithin, monoglycerides and diglycerides, and certain sorbitan and polyoxyethylene fatty esters. In bakery products these substances improve volume, uniformity, and fineness of grain. They facilitate machining in bread doughs, and the resulting bread has a softer crumb and a somewhat slower firming rate than do breads prepared without their use. The whipping properties and physical nature of frozen desserts are improved by the use of small amounts of emulsifier. In candies, emulsifiers are employed to maintain homogeneity and improve keeping quality. Sorbitan derivatives are used to retard "bloom," the whitish deposits of high-melting components of cocoa butter that occasionally appear on the surface of chocolate candies.

The texture of ice cream and other frozen desserts is dependent, in part, on the size of the ice crystals in the product, which is controlled by the addition of small amounts of stabilizing agents. Agar-agar, gelatin, cellulose gum, and other vegetable gums are among the substances used. Certain of these compounds are used in chocolate milk to increase the viscosity of the product and thus prevent the settling of cocoa particles to the bottom of the container. Gelatin, pectin, and starch are used in confectionery products to give a desired texture. Agar-agar, alginates, gum arabic, and gum tragacanth are used as stabilizers or thickeners in some types of hard gums.

Sugar-sweetened beverages normally possess a certain amount of "body." Since beverages that are sweetened with nonnutritive sweeteners do not have this property, so-called "bodying agents" are used in their production. These include such natural gums as sodium alginate and pectins, cellulose gum, and sorbitol. The foaming properties of brewed beer can also be improved by the addition of certain of these stabilizing agents.

Flavoring Materials

A wide variety of spices, natural extractives, oleoresins, and essential oils are used in processed foods. In addition, the modern flavor chemist has produced many synthetic flavors. Both types of products are used extensively in soft drinks, baked goods, ice cream, and confectionery. They are usually employed in small amounts ranging from a few to 300 parts per million. Amyl acetate, benzaldehyde, carvone, ethyl acetate, ethyl butyrate, and methyl salicylate are representative of compounds that are employed in the preparation of flavoring materials. It should be noted that many of the compounds that are used in synthetic flavoring preparations are also found in natural products or are esters of natural acids.

Many spices and spice extractives are used in sausages and prepared meats. Monosodium glutamate and protein hydrolysates are also employed to enhance the flavor of some foods.

Food Colors

Food colors of both natural and synthetic origin are extensively used in processed foods, and they play a major role in increasing the acceptability and attractiveness of these products. However, the indiscriminate use of color can conceal damage or inferiority, or make the product appear better than it actually is. In view of these factors, food colors must be used with discretion. Classes of foods that are frequently colored include confectionery, bakery goods, soft drinks, and some dairy products, such as butter, cheese, and ice cream. Natural colors used in foods include alkanet, annatto, carotene, chlorophyll, cochineal, saffron, and turmeric.

Nutrient Supplements

Vitamins and minerals are frequently added to processed foods to improve their nutritive value. It is recognized, for example, that the processing of cereal grains to produce refined milled products removes a large portion of the vitamins and minerals originally present. Definitions and standards of identity have therefore been established by the Food and Drug Administration for the enrichment of wheat flour, farina, cornmeal, corn grits, macaroni, noodle products, and rice. These standards define the minimum and maximum levels of required nutrients (thiamine, riboflavin, niacin, and iron) permitted to be added, and in some cases provide for the optional addition of sources of calcium and vitamin D. Many manufacturers of ready-to-eat breakfast foods add thiamine, riboflavin, niacin, and iron on a voluntary basis to provide products that contain amounts of these nutrients corresponding to those present in the cereals from which the foods are made.

Sources of vitamin A are added to margarine, and vitamin D is added to both fluid and evaporated milk. Vitamin A may also be added to blue cheese and gorgonzola cheese to replace that lost in the bleaching process and to low-fat milk to compensate for that removed with separated butterfat. Iodized salt contains a small amount of potassium iodide to furnish the iodine necessary to prevent simple goitre.

Preservatives, Antioxidants

Preservatives are substances added to foods to prevent or inhibit microbial growth. A number of different types are used, depending on the food product and the spoilage organism involved.

Although the baking process destroys the spores of molds and most bacteria present in flour and other ingredients, baked goods are constantly exposed to spores present in the air and on baking equipment. Under summer conditions, the organisms become active and produce a condition in the bread called "rope" which renders the product inedible. Sodium diacetate, the propionates of sodium and calcium and such acidic substances as acetic acid, lactic acid, and monocalcium phosphate are effective in retarding the growth of molds and "rope" bacteria. Sorbic acid and its sodium and potassium salts are used as antimycotic agents in cheeses, sirups, and pie fillings. Benzoic acid and sodium benzoate are employed in oleomargarine, certain fruit juices, pickles, and confections to inhibit bacterial or mold growth. Sulfur dioxide is widely used for the preservation of dried fruits. Sugar, salt, and vinegar are also effective in preventing microbial spoilage.

Fatty foods are susceptible to oxidative changes that take place in the fat molecule with the production of off-flavors and off-odors. The substances used to prevent this type of spoilage are known as antioxidants. The compounds most widely employed for this purpose are butylated hydroxyanisole, butylated hydroxytoluene, propyl gallate, and nordihydroguaiaretic acid. They are used in such foods as lard, shortening, crackers, soup bases, and potato chips. It has been found that certain acidic substances, e.g., citric acid, ascorbic acid, and phosphoric acid, enhance the properties of the antioxidant, and these substances are frequently added in combination with the antioxidant. Ascorbyl palmitate is employed in candy, and ascorbic acid has been found effective in preventing the oxidative discoloration of frozen fruits such as sliced peaches.

Miscellaneous Intentional Additives

A number of additional substances are employed for various purposes. Certain sugar substitutes are used in foods for persons who must or wish to restrict their intake of ordinary sweets. Saccharin and the calcium and

sodium cyclamates (cyclohexysulfamates) are commonly used for this purpose. Clarifying agents, e.g., tannin, gelatin, and albumen, are used to remove small particles and minute traces of copper and iron in the production of vinegar and certain beverages.

Sequestering agents such as ethylenediaminetetracetic acid and its salts prevent the adverse effects of the presence of metallic ions in certain food products by forming chemically inactive complexes with the metals. Humectants are necessary in the production of some types of confections and candy to prevent drying out. Without a humectant, shredded coconut, for example, would not remain soft and pliable. Substances used for this purpose include glycerine, propylene glycol, and sorbitol. Glazes and polishes such as waxes and gum benzoin are used on coated confections to give luster to an otherwise dull surface. Magnesium carbonate and tricalcium phosphate are employed as anticaking agents in table salt, and calcium stearate is used for a similar purpose in garlic salt.

Chemicals are sometimes added to processed fruit and vegetable products in order to improve their texture. Canned tomatoes, potatoes, and apple slices tend to become soft and fall apart. A small amount of calcium chloride or other calcium salt added to the product acts as a firming agent. Sodium nitrate and nitrite are used in the curing of meats to develop and stabilize the pink color associated with these products. Nitrogen, carbon dioxide, and nitrous oxide are employed in pressure-packed containers of certain foods to act as whipping agents or to serve merely as propellants.

The foregoing is not intended as a comprehensive discussion of all intentional additives currently in use. It is meant rather to provide examples of the various classes of intentional additives used in our food supply and the functions they serve.

INTENTIONAL ADDITIVES USED IN PROCESSED FOODS

The food chemicals about which information was obtained in the survey of the food and chemical industries are listed in the following compilation. Listed also are the food chemicals included in the definitions and standards for processed foods and the food additive status list published by the Food and Drug Administration, and those included in the regulations for meat products and fats published by the Meat Inspection Division of the Department of Agriculture.

The chemicals listed have been divided into groups according to function. Many of them appear more than once in the report. For example, ascorbic acid is listed as a nutrient (Group 10) and as an antioxidant (Group 2). Similarly, disodium phosphate appears as an emulsifier salt (Group 3), a buffer (Group 7), and a nutrient (Group 10). The index at the end of the report lists the groups in which the additives appear.

The levels of use listed in the compilation are generally those required to achieve the desired technologic results and are not levels in any way meant to describe maximum safe levels of intake. There is no implication of "safe levels" of use intended.

Within groups an alphabetical arrangement of the chemicals has been attempted. Wherever possible the compounds are listed according to active group. This system has the advantage of bringing related compounds and families of compounds together. For example, sodium ascorbate and ascorbic acid are listed in that order under "A."

The inclusion of chemicals in this list does not imply the approval or the disapproval of the National Academy of Sciences for their use in foods. The purpose of the Food Protection Committee is to list all chemicals about which the Committee has found authentic evidence of use.

CONTENTS

GROUP 1

PRESERVATIVES

GROUP 1: PRESERVATIVES

Name	Function, Usage	Levels of Use
Acetate, Sodium	Preservative	0.1%
	Licorice candy	
Acetate, Sodium di-	Mold and rope inhibitor in baked goods	
	White breads, per 100 lbs flour	3.5 - 6 oz
	Dark breads, per 100 lbs flour	4.0 - 6 oz
	Pie crusts, per 100 lbs flour	3.0 - 5 oz
	Cake, chocolate, and devil's food	0.06%
	Cake, other	0.19 - 0.31%
	Bread, rolls, buns, etc. Up to 0.4 part for each 100 parts by weight of flour used.	
Benzoate, Sodium Benzoic Acid	Preservative	
	Margarine	0.1%
	Fibered codfish, salt codfish	0.1%
	Bottled soft drinks	0.05%
	Incorporated in ice for cooling fish	
	Maraschino cherries	0.1%
	Mincemeat	
	Fruit juices	0.1%
	Pickles	0.1%
	Confections	0.1%
	Fruit jelly, preserves, jams. In a quantity reasonably necessary as a preservative.	
Benzoate, Methyl-p-hydroxy- (Methylparaben)	Preservative	
	Beverages	0.0004 - 0.0005%
	Baked goods	0.0004 - 0.0008%
	Candy	0.0004 - 0.0005%
	Artificially sweetened jellies and preserves. Up to	0.1%
Benzoate, Propyl-p-hydroxy- (Propylparaben)	Preservative	
	Beverages	0.001 - 0.003%
	Candy	0.003 - 0.01%
	Baked goods	0.003 - 0.01%
	Artificially sweetened jellies and preserves. Up to	0.1%
Bromide, Potassium	Preservative used in washing fruits and vegetables	
Carbamate, Potassium n- methyldithio-	Bacteriostat component in controlling microorganisms in cane sugar mills	
	Sugar cane being processed. Up to	0.0004%
Chlorite, Calcium hypo-	Germicide, sterilizing agent	
	Used in sterilization of fruits and vegetables by washing in 50 ppm solution	
Chlorite, Sodium hypo-	Preservative	
	Curd washing of cottage cheese	
Chlortetracycline	Preservative (antibiotic)	
	Used in cooling dip for uncooked poultry	0.0007%
Cyanodithioimidocarbonate, Disodium	Bacteriostat component in sugar cane being processed. Up to	0.0003%

Name	Function, Usage	Levels of Use
Dehydroacetate, Sodium Dehydroacetic Acid	Preservatives	
	Cut or peeled squash. Up to	0.0065%
Diethyl Pyrocarbonate	Fermentation inhibitor in still wines	
	Added before or during bottling, up to	0.02%
	When tested 5 days after bottling, up to	0.0%
Ethylenediamine	Component of bacteriostat in sugar cane being processed. Up to	0.0001%
Ethylene Oxide-Methyl Formate Mixture	Mold and yeast control in dried and glaceed fruits	
	Methylformate (as formic acid), up to	0.02%
	Ethylene oxide, up to	0.005%
Ethyl Formate	Yeast and mold inhibitor	
	Bulk and package fumigant in raisins and dried currants. As formic acid (free and combined), up to	0.025%
	Cashew nuts. Up to	0.0015%
	Dried fruits and nuts. As formic acid, up to	0.02%
Formaldehyde	Component of defoamer used in yeast and beet sugar production, as a preservative. In final product, up to	0.000001% (0.01 ppm)
Formaldehyde, para-	Polymerized formaldehyde, obtained by concentrating formaldehyde solution	
	Maple sirup, from use in tree tap holes. As formaldehyde, up to	0.0002%
Oxytetracycline	In edible tissue of chickens and turkeys when carcass is dipped in solution of oxytetracycline. Up to	0.0007%
Peroxide, Hydrogen	Preservative, bactericide for milk and cheese	
Polymixin B	Antibiotic	
	Used as bactericide in yeast culture for beer	0.0015%
	Concentration reduced to 0.05 ppm in tank	
Propionate, Calcium Propionate, Sodium Propionic Acid	Mold and rope inhibitors	
	Bread, rolls, etc.	0.125 - 0.15%
	Poultry stuffing	0.18%
	Chocolate products	0.24 - 0.30%
	Processed cheese, up to	0.30%
	Cake, cupcakes	0.0001 - 0.25%
	Artificially sweetened fruit jelly and preserves. Up to	0.1%
Sodium Chloride	Preservative	
	Pickling agent, preservative for meats, vegetables, butter Prevention of browning in cut fruit	

Name	Function, Usage	Levels of Use
Sorbate, Calcium	Fungistats	
Sorbate, Potassium		
Sorbate, Sodium	Beverages	0.003 - 0.03%
Sorbic Acid	Baked goods	0.004 - 0.1%
	Chocolate sirups	0.05 - 0.2%
	Soda-fountain sirups	0.05 - 0.1%
	Fresh fruit cocktail	0.05 - 0.1%
	Tangerine purée (sherbet base)	0.05 - 0.1%
	Salads (potato, macaroni, cole slaw, gelatin)	0.05 - 0.1%
	Cheesecake	0.05 - 0.1%
	Pie fillings	0.05 - 0.1%
	Cake	0.1%
	Cheeses in consumer-size packages. Up to	0.2%
	Artificially sweetened jellies and preserves. Up to	0.1%
Sulfites and Sulfur Dioxide	Dual-purpose preservatives and antioxidants	
	(See Group 2, Antioxidants)	

GROUP 2

ANTIOXIDANTS

GROUP 2: ANTIOXIDANTS

Name	Function, Usage	Levels of Use
Ascorbate, Calcium Ascorbate, Sodium	Antioxidants	
	Concentrated milk products	
	Cooked, cured, or comminuted meat food products, per 100 lbs of the fresh, uncured, or comminuted meat and/or by-product	7/8 oz
	Used in the pickle in which pork and beef products are cured or packed per 100 gal, up to	75 oz
Ascorbic Acid (Vitamin C)	Antioxidant	
	Frozen fruit, particularly sliced peaches	0.03 - 0.05%
	Frozen fish dip	0.25 - 2.0%
	Dry milk (wet basis)	0.0025 - 0.01%
	Beer and ale	0.0015 - 0.0075%
	Flavoring oils	0.1 - 0.3%
	Apple juice, soft drinks	0.01 - 0.05%
	Beef briskets	
	Fluid milk	
	Candy	1.0%
	Artificially sweetened jellies and preserves. Up to	0.1%
	Canned mushrooms per ounce of drained weight	37.5 mg
	Cooked, cured, comminuted meat food products, per 100 lbs of product, up to	3/4 oz
	Pickle in which pork or beef products are cured or packed, per 100 gal	75 oz
Ascorbyl Palmitate	Candy	0.06%
Butylated Hydroxyanisole (Butylated Hydroxyanisole; mixture of 2 and 3 tertiary-butyl-4-hydroxyanisole)	Antioxidant	
	Beverages, ice cream, ices	0.00003 - 0.0002%
	Candy, as percent of fat, up to	0.1%
	Baked goods	0.0002 - 0.001%
	Gelatin dessert	0.00004 - 0.00015%
	Potatoes	0.0002 - 0.0005%
	Glacéed fruits, mixed, diced. Up to	0.0032%
	Potato flakes, sweet-potato flakes. Alone or with butylated hydroxytoluene and/or propyl gallate, up to	0.005%
	Chewing gum base. Alone or with butylated hydroxytoluene and/or propyl gallate, up to	0.1%
	Defoamer component in yeast and beet-sugar production. Up to	0.1%
	Dry breakfast cereals. Total antioxidant, alone or with butylated hydroxytoluene and/or propyl gallate, up to	0.005%
	Potato granules. Total antioxidant, up to	0.001%
	Dry yeast. Up to	0.1%
	Dry mixes for beverages and desserts. Up to	0.001%
	Beverages and desserts prepared from dry mixes. Up to	0.0002%
	Lard and shortening. Up to	0.01%
	Unsmoked dry sausage. Up to	0.003%
	Emulsion stabilizers for shortenings, alone or with butylated hydroxytoluene	0.02%
	Unsmoked dry sausage	0.003%

Name	Function, Usage	Levels of Use
Butylated Hydroxytoluene (Di-tertiary-Butyl-para-Cresol) (2, 6-di-tertiary-Butyl-4-methyl phenol)	Antioxidant	
	Chewing-gum base. Alone or with butylated hydroxyanisole and/or propyl gallate, up to	0.1%
	Potato flakes and sweet-potato flakes. Up to	0.005%
	Defoamer component in yeast and beet-sugar production. Up to	0.1%
	Potato granules. Total antioxidant, up to	0.001%
	Dry breakfast cereals. Total antioxidant, up to	0.005%
	Emulsion stabilizers for shortenings. Alone or with butylated hydroxyanisole, up to	0.02%
	Enriched rice. Up to	0.0033%
	Animal fats and shortenings containing animal fats. Up to	0.01%
Carbon Monoxide (Combustion product gas)	Removing and displacing oxygen	
	Carbon monoxide, up to 4.5% of gas	
Dilauryl Thiodipropionate	Antioxidant	
	General food use, per cent of fat or oil content, up to	0.02%
Erythorbate, Sodium (Sodium Isoascorbate) Erythorbic Acid (Isoascorbic Acid)	Antioxidants	
	Pickling brine. Per 100 gal, up to	7.5 oz
	Meat products. Per 100 lbs, up to	3/4 oz
	Brine, solution. Up to	10.0%
	Beverages	0.006 - 0.01%
	Baked goods	0.02 - 0.05%
	Cured cuts, cured comminuted product to accelerate color fixing in curing, per 100 lbs. Sodium erythorbate, up to	7/8 oz
	Erythorbic acid, up to	3/4 oz
	Pickle in which pork and beef products are cured or packed, per 100 gal	75 oz
Gas, Combustion product (from the controlled combustion in air of butane, propane, or natural gas)	Removing and displacing oxygen in the processing, storage, or packaging of citrus products, vegetable fats, vegetable oils, coffee, and wine	
Gum Guaiac	Antioxidant in edible fats or oils (Equivalent antioxidant activity - 0.01%)	
	Beverages	0.04 - 0.06%
	Rendered animal fat or a combination of such fat and vegetable fat. Up to	0.1%
Lecithin	Antioxidant	
	Prepared breakfast cereal	0.0025 - 0.005%
	Candy	0.06 - 0.25%
	Sweet chocolate, milk chocolate, etc.	
	Bread, rolls, buns, etc.	
	Oleomargarine. Up to	0.5%
Nordihydroguaiaretic Acid (Dihydroguaiaretic acid, normal)	Antioxidant	
	Prepared pie-crust mix	0.01%
	Candy (of fat)	0.01%
	Lard, butter, ice cream	
	Gassed cream (pressure-dispensed whipped cream)	
	General food use. Per cent of fat or oil content including essential (volatile) oil content, up to	0.02%
	Rendered animal fat or a combination of such fat and vegetable fat. Up to	0.01%

Name	Function, Usage	Levels of Use
Oat Gum	Antioxidant	
	Butter, cream	
	Candy	1.5%
Propyl Gallate	Antioxidant	
	Lard	0.001 - 0.01%
	Prepared breakfast cereal	0.003%
	Antioxidant salt	0.07%
	Chicken soup base	0.001%
	Candy (of fat)	0.01%
	Chewing-gum base	0.1%
	General food use. Per cent of fat or oil content including essential (volatile) oil content	0.02%
	Rendered animal fat or a combination of such fat and vegetable fat. Up to	0.01%
Stannous Chloride	Antioxidant	
	Canned asparagus. Up to	0.0015%
Sulfate, Sodium Thio-	Antioxidant	
	Used to protect sliced potatoes and uncooked french fries from browning	
	Stabilizer for potassium iodide in iodized salt	0.1%
Sulfites	Preservatives, antioxidants, anti-browning agents (Should not be used in meats or in foods recognized as sources of vitamin B_1).	
Sodium Sulfite	Bacterial inhibitor in wine, brewing, and distilled-beverage industries	
	Anti-fermentative in sugar and sirup industries	
	Preservative for fruit juices, meat sirups, vegetable juices, etc.	
	Prevention of browning in cut fruits, frozen apples, dried fruits, prepared fruit-pie mix, peeled potatoes	
	Maraschino cherries, dried fruits, glaceed fruits	0.015 - 0.035%
Potassium Bisulfite (Acid potassium sulfite; potassium hydrogen sulfite)	Uses listed for Sodium Sulfite	
	Ale, beer, etc. As SO_2, up to	0.0025%
	Wine	
Sodium Bisulfite (Acid sodium sulfite; sodium hydrogen sulfite; sodium acid sulfite)	Uses listed for Sodium Sulfite	
	Ale, beer, etc. As SO_2, up to	0.0025%
	Fruit-pie mix. Up to	0.0005%
Potassium Metabisulfite	Uses listed for sulfites and bisulfites above	
Sodium Metabisulfite	Uses listed for sulfites and bisulfites above	
Sulfur Dioxide	Antioxidant, preservative, anti-browning agent (Used for purposes listed under Sodium Sulfite)	
	Wine	0.01 - 0.02%
	Corn sirup, table sirup	0.0015 - 0.0025%
	Jelly, imitation	0.002%
	Dried fruits	
	Brined fruits, maraschino cherries	
	Beverages	0.008 - 0.05%
	Dehydrated potatoes	0.004 - 0.006%
	Soups	0.0012 - 0.002%
	Condiments	0.035 - 0.04%
	(Should not be used in meats or in foods recognized as sources of Vitamin B_1).	

Name	Function, Usage	Levels of Use
Thiodipropionic Acid	Antioxidant	
	General food use. Per cent of fat or oil content including essential (volatile) oil content of food, up to	0.02%
Tocopherols (Vitamin E)	Antioxidant	
	Essential oils	0.02 - 0.10%
	Rendered animal fats or a combination of such fat and vegetable fat in quantities up to	0.03%
2,4,5-Trihydroxybutyrophenone	Used as an antioxidant alone or in combination with other antioxidants	
	Total antioxidant, up to	0.02%

GROUP 3

SEQUESTRANTS

GROUP 3: SEQUESTRANTS

(Chelating Agents, Metal Scavengers, Emulsifier Salts, Texturizers, Stabilizing Agents)

Name	Function, Usage	Levels of Use
Acetate, Calcium	Beverages	0.01 - 0.02%
Acetate, Calcium di-	Baked goods	0.02 - 0.05%
Acetate, Potassium		
Acetate, Sodium di-		
Calcium Salts	Emulsifier salts	
Calcium Acetate		
Calcium Chloride	Evaporated milk. Calcium chloride, up to	0.1%
Calcium Citrate	Frozen desserts. Calcium sulfate	
Calcium Diacetate		
Calcium Gluconate		
Calcium Phosphate, monobasic		
Calcium Phytate		
Calcium Sulfate		
Citrate, Isopropyl (Monoisopropyl citrate)	Sequestrant, antioxidant	
	Oleomargarine, salad oil. Up to	0.02%
	General food use. Up to	0.02%
	Animal fats and shortenings. Up to	0.01%
Citrate, Monoglyceride	Synergist and solubilizer for antioxidant formulations for oils and fats. Up to	0.02%
Citrate, Stearyl	Metal scavenger, antioxidant. Up to	0.15%
	Oleomargarine. Up to	0.15%
Citrate, Triethyl	Dried egg whites. Up to	0.25%
Citrate Salts	Plasticizers for cheese spread, emulsifier salts	
Calcium Citrate		
Potassium Citrate	Pasteurized process cheeses and cheese foods. Up to	3.0%
Sodium Citrate	Cream (prevents "cream plug")	0.1%
	Cream (prevents "feathering" in coffee cream)	0.012 - 0.37%
	Ice cream emulsifier	0.04%
	Processed cheese. Up to	3.0%
	Evaporated milk. Up to	0.1%
	Various cheeses	
Citric Acid	Lard	0.001 - 0.01%
	Frozen peaches	
	Grape wine	
	Canned fish cakes	0.05%
	Pie-crust mix	0.05%
	Prepared breakfast cereal	0.002%
	Soup base	0.0002%
	Antioxidant salt	0.035%
	Used to assist dispersion of finings in brewing industry. Up to	0.005%
	Oleomargarine	
	Rendered animal fat or a combination of such fat and vegetable fat. Up to	0.01%
Ethylenediamine Tetraacetate, (EDTA)		
Calcium Disodium Salt of EDTA	Carbonated beverages	.0035%
Disodium Dihydrogen Salt of EDTA	Crabmeat (cooked canned), retard struvite formation, promote color retention	.0275%
	Dressings, nonstandardized	.0075%

Name	Function, Usage	Levels of Use
Ethylenediamine Tetraacetate, (EDTA) (cont'd)	Fermented malt beverages	.0025%
	Salad dressing, french dressing, mayonnaise, sauces	.0075%
	Oleomargarine	.0075%
	Pecan-pie filling	.01%
	Potato salad	.01%
	Sandwich spread	.01%
	Shrimp (cooked canned), retard struvite formation, promote color retention	.025%
	Spice extractives in soluble carriers	.006%
	Processed dry pinto beans, promote color retention	.08%
	Canned carbonated soft drinks	.0035%
	Aqueous multivitamin preparations	.015%
	Vinegar	.02%
	Clams (cooked canned), promote color retention	.034%
	With Calcium Disodium, EDTA	
	Dressings, nonstandardized	.0075%
	Sauces	.0075%
	Sandwich spread	.01%
	Canned kidney beans	.0165%
Gluconate, Calcium Gluconate, Sodium	Sequestrants	
Oxystearin	Used in cottonseed and soybean cooking and salad oils. Up to	.125%
	Dressings for foods	
Phosphates Monocalcium Acid Phosphate Potassium Phosphate, dibasic Sodium Phosphate, dibasic (Disodium orthophosphate) Sodium Phosphate, monobasic (Monosodium orthophosphate)	Emulsifier salts, texturizers, sequestrants	
	Evaporated milk. Disodium phosphate or sodium citrate or both, or calcium chloride, added in a total quantity up to 0.1% by weight of the finished evaporated milk	
Sodium Phosphate, tribasic (Trisodium ortho-phosphate)	Pasteurized process cheeses, cheese spreads, and cheese foods. Up to	3.0%
	Ice cream. Disodium phosphate used to prevent thickening of chocolate sirup, up to	0.2%
Phosphate, Calcium hexameta- (Calcium metaphosphate) Phosphate, Sodium hexameta- (Sodium metaphosphate)	Emulsifiers, sequestering agents, texturizers	
	Breakfast cereals	0.27 - 0.3%
	Angel food cake. Up to	1.0%
	Flaked fish (prevents struvite formation)	0.5%
	Ice cream, ice milk	0.05%
	Bottled beverages, reconstituted lemon juice	
	Puddings	0.02 - 0.7%
	Processed cheeses	
	Artificially sweetened jellies, preserves. Sodium hexametaphosphate, up to	0.5%
	Potable water supplies in order to prevent scale formation and corrosion, up to	10 ppm
	Pumping pickle for curing hams, shoulders, etc. The finished product may contain up to	0.5%
Phosphate, Sodium Aluminum	Various cheeses	
Phosphate, Sodium pyro- (Sodium tetrapyro-phosphate) (Tetrasodium pyro-phosphate) (Sodium acid pyro-phosphate)	Emulsifier salt, texturizer	
	Cold-water puddings. Up to	2.0%
	Processed cheeses. See phosphates	

Name	Function, Usage	Levels of Use
Phosphate, Sodium tripoly-	Texturizer, sequestrant	
Phosphoric Acid	Sequestering agent	
	Rendered animal fat or a combination of such fat and vegetable fat. Citric acid or phosphoric acid not to exceed 0.01% is added with combinations of butylated hydroxyanisole or with combinations of butylated hydroxyanisole and nordihydroguaiaretic acid or propyl gallate	
Sorbitol	Sequestrant	
	Confectionery Vegetable oils	0.0025 - 0.005%
Tartaric Acid Tartrate, Sodium Tartrate, Sodium Potassium (Rochelle salts)	Emulsifiers, sequestrants Pasteurized process cheese, pasteurized cheese food, and pasteurized cheese spread. Up to	3.0%
Thiosulfate, Sodium	Sequestrant in salt. Up to	0.1%

GROUP 4

SURFACE ACTIVE AGENTS

GROUP 4: SURFACE ACTIVE AGENTS

Name	Function, Usage	Levels of Use
Alginic Acid, Propylene glycol ester	Defoaming agents for use in processing foods	
Aluminum Stearate	Defoamer component used in processing beet sugar and yeast	
Ammonium Stearate	Defoamer component used in manufacture of beet sugar	
Butoxypolyethylene Polypropylene Glycol (mol. wt 3800-4200)	Defoamer component for use in beet-sugar manufacture. In finished sugar, up to	0.0001%
Butyl Stearate	Component of defoamer used in production of beet sugar and yeast, only in amounts reasonably required to inhibit foaming	
Cholic Acid	Emulsifier	
	Dried egg whites. Up to	0.1%
Cobaltous Salts, cobaltous acetate, chloride, sulfate	Used in fermented malt beverages to prevent gushing, (calculated as cobalt), up to	0.00052%
Desoxycholic Acid	Emulsifying agent	
	Dried egg whites. Up to	0.1%
Dimethyl Polysiloxane, (100-350 centistokes) (Antifoam A)	Anti-foaming agent for use in processing foods in amounts reasonably required to inhibit foaming	
	Chewing-gum bases, molasses, soft drinks, sugar distillation, fruit-peeling solutions, fruit juices	0.0003%
	Skim milk	0.001%
	Wine fermentation	0.00001%
	Sirup, imitation jelly	0.0008%
	Soups. Up to	0.001%
	Rendered fats	0.001%
	Curing solution	0.005%
Dodecyl Benzenesulfonate, Sodium	Component of commercial detergent for raw products followed by water rinsing	
2-Ethyl 1-Hexylsulfate, Sodium	Component of detergent for raw products followed by water rinsing	
Eugenol	Defoamer component in yeast production	
Fatty Acids (one or any mixture of the following fatty acids: capric, caprylic, lauric, myristic, oleic, palmitic, and stearic)	Emulsifiers	
	Defoamer component for use in processing beet sugar and yeast, only in amounts reasonably required to inhibit foaming	
Fatty Acids, Polyglycerol esters	Prepared from edible fats, oils, and fatty acids derived from: corn, cottonseed, palm (from fruit), peanut, safflower, sesame, and soybean oils, lard and tallow. Hydrogenated or nonhydrogenated	
Fatty Acids, Salts of (one or more of the aluminum, ammonium, calcium, magnesium, potassium, and sodium salts of the above fatty acids)	Emulsifiers	

Name	Function, Usage	Levels of Use
Fatty Acids, Soybean, Hydroxylated	Defoamer component used in beet sugar and yeast production	
Fatty Acids of Cottonseed and Soybean	Defoaming agent	
Fatty Acids of Tallow	Defoaming agent	
Formaldehyde	Defoamer component used in production of beet sugar and yeast, only in amounts reasonably required to inhibit foaming	
Glyceride Citrate, mono-	Synergist and solubilizer for antioxidant formulations for oils and fats. Up to	0.02%
Glycerides, Diacetyl tartaric acid esters of mono- and di- from the glycerolysis of edible fats or oils	Emulsifying agent	
	Bakery products. Up to 20% by weight of the combination of such a preparation and the shortening	
	Rendered animal fat and shortening containing animal fat	
Glycerides, Distilled acetylated mono-	Food emulsifier, binder in nutrient capsules and tablets, food coating agent. Up to	5.0%
	Rendered animal fat and shortening containing animal fat	
Glycerides, mono-, of fatty acids	Shortening emulsifier	
Glycerides, mono- and di- (of edible fats or oils, or edible fat-forming fatty acids)	Emulsifying and defoaming agents	
	Beverages	0.0005 - 0.0015%
	Lard	0 - 16%
	Ice cream, ice milk	0.1 - 0.2%
	Bakery products, other than bread and rolls	0.001 - 0.33%
	Shortening	0.02 - 6.4%
	Confections	0.0002 - 5.0%
	Chewing-gum base component	0.0002 - 5.0%
	Sweet chocolate, milk chocolate, etc. In combination with monosodium phosphate derivatives thereof, up to	0.5%
	Oleomargarine. Up to	0.5%
	Rendered animal fat or a combination of such fat and vegetable fat	
	Whipped toppings	0.1 - 5.0%
Glycerides, Monosodium phosphate derivatives of mono- and di- from the glycerolysis of edible fats or oils	Emulsifying agent	
	Sweet chocolate, milk chocolate, etc. Up to	0.5%
Glycerides, Sodium sulfoacetate derivatives of mono- and di-	Emulsifiers	
Glycerides, Sulfoacetates of mono- and di-	Oleomargarine. Up to	0.5%
Glyceryl Abietate	In still and carbonated alcoholic beverages and fruit drinks. Up to	0.006%
Glyceryl lacto esters of fatty acids	Food emulsifier. For use in shortening where free and combined lactic acid does not exceed 1.75% of shortening plus additive	
Glyceryl mono- and di-esters (from alcoholysis of soybean oil and/or hydrogenated tallow) and propylene glycol	Defoamer in yeast production	

Name	Function, Usage	Levels of Use
Glycocholic Acid	Emulsifying agent	
	Dried egg whites. Up to	0.1%
Isopropyl Alcohol (Isopropanol)	Defoamer component used in processing beet sugar and yeast	
Lauryl Sulfate, Sodium	Component of detergent for raw products followed by water rinsing	
	Egg white solids. Up to	0.1%
	Frozen egg whites. Up to	0.125%
	Liquid egg whites. Up to	0.125%
	Confectionery. Up to	0.125%
Lecithin (with or without related phosphatides) (Monoaminophosphatide)	Emulsifier	
	Sweet chocolate, milk chocolate, etc. Up to	0.5%
	Bakery products	
	Frozen desserts. Up to	0.5%
	Oleomargarine. Up to	0.5%
	Rendered animal fat or combination of animal and vegetable fat	
Lecithin, Hydroxylated	Component of defoamer for yeast and beet-sugar production, emulsifier in foods	
	Shortening for bakery products	
Methyl Glucoside of fatty acids of edible coconut oil	In manufacture of beet sugar. Up to	0.0005%
Methyl Naphthalene Sulfonate, Sodium (245-260 mol. wt)	In solutions for peeling fruits and vegetables; to be followed by water rinse	
Methyl Sulfate, Sodium	Pectin processing. Up to	0.5%
Mineral Oil	Defoamer component used in processing beet sugar and yeast. In yeast, up to	0.015%
Oleic Acid	Defoaming agent	
Ox Bile Extract	Emulsifier	
	Dried egg whites. Up to	0.1%
Oxystearin	Defoamer component in production of beet sugar and yeast, only in amounts reasonably required to inhibit foaming	
Petrolatum NF and USP	Defoamer component in yeast and beet-sugar production. In yeast, up to	0.015%
Petroleum Hydrocarbons: Initial boiling 315°F min; Final boiling point 650°F max; Ultraviolet absorptivity at 290 mu; 0.04 liter per gram centimeter max	Defoamer in food processing. Final product content, up to	0.0003%
	Detergent component for fruit. Content of rinsed fruit, up to	0.0001%
	Froth flotation for cleaning vegetables. Content of washed product, up to	0.0005%
Petroleum Waxes	Defoamer component used in processing beet sugar and yeast. Yeast content up to	0.015%
Polyacrylamide (contains no more than 0.2% acrylamide monomer)	Used in washing fruits and vegetables. Wash water content, up to	0.001%

Name	Function, Usage	Levels of Use
Polyethoxylated Alkylphenol (dodecyl, nonyl, and octyl) (426-1184 mol. wt)	Component of commercial detergent for raw products, followed by water rinsing	
Polyethoxylated Alkylphenol, benzyl ether of (726-1308 mol. wt)	Component of detergent for raw products followed by water rinse	
Polyethylene Glycol (400-2000 mol. wt)	Defoamer component used in processing beet sugar and yeast	
Polyethylene Glycol (600) dioleate	Defoamer agent component used in processing beet sugar and yeast	
Polyethylene Glycol ester of mixed fatty acids from tall oil (abietic, oleic, and linoleic) (1050 average mol. wt)	Component of defoamer for beet-sugar production. Finished product content up to	0.0001%
Polyethylene Glycol (400) tallow diester	Defoamer in manufacture of sugar from sugar beets. Finished product content up to	0.0003%
Polyethylene Glycol (600) monoricinoleate	Defoamer component used in processing beet sugar and yeast	
Polyoxyalkalene Glycol (2225 mol. wt)	Defoamer component in beet-sugar production, content in defoamer up to	10.0%
Polyoxyethylene Glycol (400-2000 mol. wt)	Component of defoamer in beet-sugar production	
Polyoxyethylene Glycol (800) ester of edible cottonseed oil fatty acids	Solubilizing agent in pickles, up to	0.05%
Polyoxyethylene Glycol (600) monoricinoleate	Defoamer component used in beet-sugar and yeast production	
Polyoxyethylene (40) monostearate (Polyoxyl 40 stearate)	Defoamer in processed foods; emulsifier in frozen desserts	
Polyoxyethylene (20) sorbitan monolaurate (Polysorbate 20)	Flavor-dispersing agent for miscellaneous flavored foods and beverages; defoaming agent	
Polyoxyethylene (20) sorbitan monooleate (Polysorbate 80)	Emulsifier; defoamer component used in production of beet sugar	
	Dietary vitamin and vitamin-mineral supplements, total intake per day	300 mg
	If vitamin A in excess of 30,000 units/dose	500 mg
	Edible fat or oil type special dietary supplement. Total intake per day	360 mg
	Yeast defoamer formulations	4.0%
	Solubilizing and dispersing agent in pickles and pickle products	0.05%
	Coarse crystalline sodium chloride	10 ppm
	Flavor-dispersing agent, in amounts reasonably required	
	Dill oil in canned spiced green beans	0.003%
	Alone or in combination with polysorbate 60 in shortenings and edible oils intended for use in nonstandardized baked goods, baking mixes, icings, fillings, and toppings, and in the frying of foods. Combined total 1.0%	1.0%
	Ice cream, frozen custard, ice milk, fruit sherbet and nonstandardized frozen desserts, alone or in any combination with polysorbate 65. Combined total 0.1%	0.1%

Name	Function, Usage	Levels of Use
Polyoxyethylene (20) sorbitan monooleate (cont'd)	Pressure-dispensed cream whip	0.085 - 0.12%
	Beverages	0.0055 - 0.07%
	Confectionery	0.012 - 0.06%
	Soup bases	0.01 - 0.02%
	Wetting and dispersing agent for dry, powdered, processed foods	
Polyoxyethylene (20) sorbitan monopalmitate (Polysorbate 40)	Emulsifier, flavor-dispersing agent, defoaming agent	
	Cakes, including bakery and pre-mix types, blended with sorbitan monostearate or monopalmitate, up to (Alternate: polyoxyethylene (20) sorbitan monostearate)	0.46%
Polyoxyethylene (20) sorbitan monostearate (Polysorbate 60)	Emulsifier, flavor-dispersing agent	
	Shortening and edible oils up to	1.0%
	Defoaming agent in food processing. In amounts reasonably required to inhibit foaming	
	Whipped vegetable-oil topping, up to	0.4%
	Cakes and cake mixes, up to	0.46%
	Cake icing or cake filling, up to	0.46%
	Sugar-type confection coatings, up to	0.2%
	Coconut spread, up to	0.23%
	Foaming agent in beverage mix	0.0005 - 0.03%
	Confectionery	0.007 - 0.055%
	Chicken bases	0.4%
	Gelatin desserts	0.008 - 0.01%
	Dressings made without egg yolks, up to	0.3%
	Solid-state, edible vegetable fat-water emulsions used as substitutes for milk or cream in beverage coffee, up to	0.4%
	Dietary vitamin supplements, amount/daily dose	66 mg
	Foaming agent in nonalcoholic beverage mix to be added to alcoholic beverages	4.5%
	Wetting and dispersing agent for dry, powdered processed foods	
Polyoxyethylene (20) sorbitan tristearate (Polysorbate 65)	Emulsifier; defoaming agent; flavor-dispersing agent	
	Cakes and cake mixes, including cake-type doughnuts, up to	0.32%
	Whipped vegetable-oil toppings, up to	0.4%
	Cake icings and fillings, up to	0.32%
	Ice cream, frozen custard, ice milk, fruit sherbet, and nonstandardized frozen desserts, up to	0.1%
	Solid-state, edible vegetable fat-water emulsions used as substitutes for milk or cream in beverage coffee, up to	0.4%
	Wetting and dispersing agent for dry, powdered, processed food	
Polyoxypropylene Glycol	Component of defoamer for yeast and beet-sugar production	
Polypropylene-Glycol (1200-2500 mol. wt)	Defoamer-agent component used in processing beet sugar and yeast	
Propylene Glycol mono- and di- esters of fats and fatty acids	Emulsifier and additive produced from edible fats and fatty acids	
	Defoamer component used in processing beet sugar and yeast in amounts reasonably required to inhibit foaming	
	Rendered animal fat or a combination of such fat with vegetable fat	
Propylene Glycol and Glyceryl mono- and di-esters from the alcoholysis of soybean oil and/or hydrogenated tallow	Component of defoamer used in yeast and beet-sugar production	

Name	Function, Usage	Levels of Use
Silica Aerogel (finely powdered microcellular silica foam having a minimum silica content of 89.5%)	Component of anti-foaming agent	
Silicon Dioxide	Defoaming agent	
Sorbitan Monooleate	Emulsifying agent for special dietary products	
	Defoaming agent in yeast production	
	Chewing-gum plasticizer	
Sorbitan Monopalmitate	Emulsifier; flavor dispersing agent	
	Alternate for sorbitan monostearate in cakes and cake mixes. Up to	0.61%
Sorbitan Monostearate	Emulsifier; defoaming agent; flavor-dispersing agent	
	Cakes and cake mixes, including cake-type doughnuts, up to	0.61%
	Whipped vegetable-oil toppings, up to	0.4%
	Nonstandardized confectionery and cookie coatings, up to	1.0%
	Cake icing and filling, up to	0.7%
	Solid-state, edible vegetable fat-water emulsions used as substitutes for milk or cream in beverage coffee, up to	0.4%
	Coconut spread	0.35%
	Beverages	0.012 - 0.025%
	Confectionery	0.0006 - 0.5%
	Baked goods	0.0005 - 0.4%
Sorbitan Tristearate	Emulsifier	
	Alternate for sorbitan monostearate in confection coatings, up to	1.0%
Soybean Oil Fatty Acids Hydroxylated	Defoamer component used in production of beet sugar and yeast, in amounts reasonably required to inhibit foaming	
Stearate, Potassium	Defoamer-agent component	
Stearate, Sodium	Emulsifier	
Stearyl-2-lactylic Acid	Emulsifier	
	In nonyeast-leavened bakery products and pancake mixes, up to	0.35%
	In shortening for above products, cake icings, and fillings, up to	3.0%
Stearyl-2-lactylate, Calcium	Dough conditioner in yeast-leavened bakery products and prepared mixes for yeast-leavened bakery products, per 100 parts by weight of flour, up to	0.5 part
	Whipping agent in dried egg white, up to	0.5%
	Whipping agent in liquid and frozen egg white, up to	0.05%
	Bakery products. Per 100 parts by weight of flour used	0.5 part
Stearyl Monoglyceridyl Citrate	Emulsion stabilizer in shortenings with emulsifiers	
Tallow Alcohol, Hydrogenated	Component of defoamer used in yeast and beet-sugar production in amounts reasonably required to inhibit foaming	
Tallow, Hydrogenated	Defoamer component used in production of beet sugar and yeast in amounts reasonably required to inhibit foaming	
Tallow, Oxidized	Component of defoamer used in yeast and beet-sugar production, in amounts reasonably required to inhibit foaming	

Name	Function, Usage	Levels of Use
Tallow, Sulfated	Component of defoamer in yeast and beet-sugar production, in amounts reasonably required to inhibit foaming	
Taurocholate, Sodium Taurocholic Acid	Emulsifiers	
	Dried egg whites. Up to	0.1%
Wax, Microcrystalline, and Paraffin	Defoamer component in yeast and beet-sugar production. Content of final product up to	0.0005%

GROUP 5

STABILIZERS, THICKENERS

GROUP 5: STABILIZERS, THICKENERS

Name	Function, Usage	Levels of Use
Agar-agar	Thickening agent, stabilizer	
	Beverages	0.006 - 0.1%
	Ice cream, ices, frozen custard, sherbet	0.01 - 0.5%
	Meringue	0.2%
	Baked goods	0.03 - 0.05%
	Piping jelly	0.7 - 1.0%
	Frozen candied sweet potatoes	0.045 - 0.08%
	Icings	0.03 - 3.0%
	Confectionery jellies. Up to	10.0%
	Artificially sweetened jelly and preserves	
Alginates (Algins)	Stabilizers, water retainers	
Ammonium Alginate	Beverages	0.005 - 0.03%
Calcium Alginate	Ice cream, ices, frozen custard	0.1 - 0.5%
Potassium Alginate	Emulsions	0.001 - 0.01%
Sodium Alginate	Desserts	0.4%
	Baked goods	0.0065 - 0.02%
	Confectionery ingredient. Up to	10.0%
	Cake icing, cakes, clarifying agent for wine, chocolate-milk stabilizer, stabilizer in gassed cream (pressure-dispensed whipped cream)	
	Meat	0.1%
	Toppings	0.3 - 0.8%
	Condiments	0.06 - 1.0%
	Cheeses, cheese spreads, cheese foods, etc., up to	0.8%
	Salad dressing. Up to	0.75%
	Artificially sweetened jelly and jam ingredient	
Alginic Acid, Propylene Glycol ester of (Algin derivative) (Propylene Glycol Alginate)	Stabilizer	
	Ice cream, frozen custard, ice milk, fruit sherbet, water ices. Up to	0.5%
	Beverages	0.015 - 0.02%
	Icings	0.005 - 0.015%
	Cheeses, cheese spreads, cheese foods, etc., up to	0.8%
	French dressing, salad dressing. Up to	0.75%
Carrageenan (Irish moss derivative, extract of Irish moss, chondrus extract, carragheenin, carrageenin, carrageen)	Stabilizer, emulsifier	
	Chocolate products	0.23 - 0.4%
	Chocolate-flavored drinks, chocolate milk	0.145 - 0.2%
	Gassed cream (pressure-dispensed whipped cream)	
	Sirups for frozen products	
	Confections	0.0001 - 1.0%
	Evaporated milk. Up to	0.015%
	Cheese spreads, and cheese foods. Up to	0.8%
	Ice cream, frozen custard, sherbets ices, etc. Up to	0.5%
	French dressing, salad dressing. Up to	0.75%
	Artificially sweetened jellies and jams	
Carrageenan, Salts of (A mixture of two or more of the ammonium, calcium, potassium, or sodium salts)	Beverages	0.03%
	Baked goods	0.1 - 0.3%
	Puddings	0.16 - 2.0%
	Jelly	0.1 - 0.02%
	Sirups	0.1 - 0.3%
	(See uses for Carrageenan)	
Cellulose, Hydroxypropyl methyl-	Emulsifier, protective colloid, stabilizer, suspending agent, thickener	

Name	Function, Usage	Levels of Use
Cellulose, Methyl- (U.S.P. methyl cellulose, except that the methoxy content shall not be less than 27.5% and not more than 31.5% of dry weight)	Thickening agent, stabilizer	
	Bodying agent for beverages and canned fruits sweetened with non-nutritive sweeteners	
	Thickener for Kosher food products. Up to	1.0%
	Bulking agent for low-calorie crackers	21%
	Binder in non-wheat baked goods for non-allergenic diets	1.0%
	Bodying agent for beverages sweetened with non-nutritive sweeteners	
	Beer-foam stabilizer	
	Condiment carrier	
	Food products for diabetics	
	Low-calorie dietetic products	
	Edible film for food products	
	Leavening agent for prepared mixes	
	Clarifier for vinegar and beverages	
	Imitation jellies and jams	
	Processed cheese	
	Beverages	0.008 - 0.02%
	Confectionery	0.002 - 0.003%
	Toppings	0.024 - 0.3%
Cellulose, Methyl ethyl	Agent to promote foaming, aerating, emulsifying	
	Vegetable-fat whipped topping. Up to	3.0%
Cellulose, Sodium Carboxymethyl (Cellulose gum) (Carboxymethyl cellulose)	Stabilizer	
	Ice cream	
	Beverages	0.003 - 0.01%
	Confectionery	0.0006 - 3.0%
	Baked goods	0.0004 - 0.004%
	Icings and toppings	0.16 - 0.23%
	Bodying agent for canned fruits sweetened with non-nutritive sweeteners	
	Stabilizer for chocolate milk (chocolate-flavored beverage)	
	Gassed cream (pressure-dispensed whipped cream)	
	Sirups for frozen products	
	Variegated mixtures, frozen	0.75 - 1.25%
	Cheese spreads, certain cheeses, up to	0.8%
	French dressing, salad dressing. Up to	0.75%
	Artificially sweetened jelly and preserves	
	Jelling ingredient	
Dextrans (of mol. wt below 100,000)		
Dextrin	Foam stabilizer for beer	
Eucheuma Cottoni, extract Eucheuma Spinosum, extract	Stabilizer and thickening agent	
Furcelleran (refined hydrocolloid prepared by aqueous extraction of Furcellaria Fastigiata of the class Rodophyceae (red seaweed))	Emulsifier, stabilizer, or thickener in foods	
Furcelleran, Salts of (One or more of a mixture of the sodium, calcium, potassium and ammonium salts of Furcelleran)		

Name	Function, Usage	Levels of Use
Gelatin	Thickener, stabilizer	
	Base for fruit gelatins and puddings	
	Chocolate milk, chocolate-flavored beverages	
	Cream	
	Confectionery ingredient	10.0%
	Cream cheese, neufchatel cheese. Up to	0.5%
	Cheese spreads and cheese foods. Up to	0.8%
	Ice cream, frozen custard, fruit sherberts, and water ices. Up to	0.5%
Gigartina Acicularis extract Gigartina Pistillate extract Gigartina Radula extract Gigartina Stellata extract	Stabilizer and thickeners, species of chondrus	
	(See Carrageenan)	
Gum Acacia (Gum arabic)	Thickener, stabilizer	
	Foam stabilizer in soft-drink and brewing industry	0.0003 - 0.04%
	Ice cream, ices	0.0005 - 0.055%
	Candy	0.0005 - 0.11%
	Baked goods	0.0001 - 0.06%
	Meringue	0.075 - 0.5%
	Sirup	0.016 - 0.024%
	Gelatin desserts, puddings	0.0075 - 0.1%
	Ice cream, frozen custard, fruit sherbets, water ices. Up to	0.5%
	French dressing, salad dressing. Up to	0.75%
Gum, Carob Bean (Locust bean gum)	Thickener, stabilizer	
	Chocolate milk, chocolate-flavored beverage	
	Gassed cream (pressure-dispensed whipped cream)	
	Sirups for frozen products	
	Confections	1.0%
	Cream cheese, neufchatel cheese. Up to	0.5%
	Cheese spreads, cream cheese with other foods; etc. Up to	0.8%
	Ice cream, frozen custard, fruit sherbet, water ices. Up to	0.5%
	French dressing, salad dressing. Up to	0.75%
	Artificially sweetened jellies and preserves	
Gum Ghatti	Thickener, stabilizer	
Gum, Guar	Thickener, stabilizer	
	Stabilizer for frozen fruit, icings and glazes, fruit drinks	
	Thickener for hot and cold drinks	0.0006 - 0.01%
	Binder for meats	0.25%
	Confections	0.0006 - 2.0%
	Baked goods	0.2 - 0.3%
	Cheese spreads, cream cheese with other foods; etc. Up to	0.8%
	Ice cream, ices, etc. Total stabilizer up to	0.5%
	French dressing, salad dressing. Up to	0.75%
Gum Karaya (Sterculia gum)	Thickener, stabilizer	
	Sirups for frozen products	
	Ice milk	
	Sherbets, water ices	
	Confections	2.0%
	(See uscs for Carob Bean Gum)	

Name	Function, Usage	Levels of Use
Gum, Oat	Thickener, stabilizer	
	Pasteurized cheese spreads, cream cheese with other foods; etc. Up to	0.8%
Gum Tragacanth	Thickener, stabilizer	
	Fruit jelly	0.0003%
	Ornamental icings	
	Fruit sherbets, water ices	
	Salad dressing, french dressing	
	Confections	2.0%
	(See uses for Carob Bean Gum.)	
Methyl Sulfate, Sodium	Pectin processing. In pectin, up to	0.5%
Pectin Pectin, Low Methoxyl Pectinate, Sodium	Stabilizer, thickener	
	Bodying agent for cyclamate-sweetened beverages	
	Sirups for frozen products	
	Ice cream, ice milk	
	Confections	3.0%
	Fruit sherbet, water ices. Up to	0.5%
	French dressing, salad dressing. Up to	0.75%
	Fruit jelly, preserves, jams. In a quantity which reasonably compensates for deficiency, if any, of the natural pectin content of the fruit (juice) ingredient	
Peptones	Foam stabilizer for beer	
Psyllium Seed Husk	Stabilizer	
	Frozen desserts. Up to	0.5%
Sorbitol	Bodying agent	
Starch, modified with propylene oxide (Hydroxypropyl starch)	Thickener	
	Propylene oxide in finished starch	25%
Starch, modified, Food (Treated with succinic anhydride, 1-octenyl succinic anhydride, aluminum sulfate, or sodium hydroxide, etc.)	Thickener	
	Vanilla powder	

GROUP 6

BLEACHING AND MATURING AGENTS, STARCH MODIFIERS

GROUP 6: BLEACHING AND MATURING AGENTS, STARCH MODIFIERS

Name	Function, Usage	Levels of Use
Acetone Peroxides	Maturing and bleaching of flour	
	Dough-maturing agent, H_2O_2 equivalent per 100 g additive plus carrier. Up to	0.75 g
	Flour, H_2O_2 equivalent per 100 g of additive plus carrier, up to	3 - 10 g
Azodicarbonamide	Bleaching and maturing agent	
	Flour, etc. Up to	0.0045%
Bromate, Calcium Bromate, Potassium	Maturing agents, dough conditioners	
	Bromated flours. Up to	0.005%
	Bromated whole wheat flours. Up to	0.0075%
Chloramine, Sodium p-toluene sulfo- (Chloramine T)	Water-purifying agent; deodorant	
	Used to remove onion and weed odor in cheese	
Chlorine (Chlorine gas)	Flour-bleaching, aging, and oxidizing agent	
	Level of use for bleaching flour	0.008 - 0.30%
	Water purification	
Chlorine Dioxide	Flour-bleaching and oxidizing agent	
	Level of use for bleaching flour	0.0001 - 0.0066%
Chlorite, Sodium Chlorite, Sodium hypo-	Modifiers for food starch	
Iodate, Calcium Iodate, Potassium	Dough conditioners, oxidizing agents	
	Bread, rolls, buns, etc. Per cent of flour used	0.0075%
Nitrogen Oxides (Oxides of nitrogen) Nitrosyl Chloride	Bleaching agents for cereal flours	
1-Octenyl Succinic Anhydride	Starch modifier, up to	3.0%
	In combination with up to 2% aluminum sulfate	2.0%
Peracetic Acid (Peroxyacetic acid)	Starch modifier	
Permanganate, Potassium	Starch modifier	
Peroxide, Benzoyl	Bleaching agent	
	Bleached flours	0.001 - 0.01%
	Blue cheese, gorgonzola cheese For milk to be used for certain cheeses. In milk bleached, up to	0.002%
Peroxide, Calcium (Calcium dioxide)	Dough conditioner, oxidizing agent	
	Bread, rolls, buns, etc. See uses for Bromates	
Peroxide, Hydrogen	Bleaching, oxidizing agent, modifier for food starch	
	Bleach for tripe, butter	
	Treatment of eggs before drying	
	Cheeses (cheddar, washed curd, colby, granular, and Swiss)	

Name	Function, Usage	Levels of Use
Phosphate, Sodium tri-meta-	Starch modifier	
Phosphorous Oxychloride (Phosphorous chloride)	Starch modifier	
Propylene Oxide	Starch modifier	
Succinic Anhydride	Starch modifier	
Vinyl Acetate	Starch modifier	

GROUP 7

BUFFERS, ACIDS, ALKALIES

GROUP 7: BUFFERS, ACIDS, ALKALIES

Name	Function, Usage	Levels of Use
Acetate, Calcium Acetate, Potassium Acetate, Sodium	Buffers	
	Corn sirup, table sirup	0.01 - 0.04%
	Breakfast cereal	0.005 - 0.006%
	Confections	0.01 - 1.0%
	Beverages	0.000075 - 0.00015%
	Ice cream, ices	0.001 - 0.0015%
	Baked goods	0.0015%
	Artificially sweetened fruit jelly. Sodium citrate, potassium citrate, or any combination thereof, per 100 lbs of food, up to	2 oz
Acetic Acid	Acid	
	Acidulant in sirups, sherbets, ices, ice cream, beverages, bakery products, confections, up to	3.0%
	Corn sirup, table sirup	0.005 - 0.033%
	Pickles, catsup, canned artichokes	
	Cottage cheese	
	Confections	1.0%
	Pasteurized process cheese, etc. Used as an acidifying agent in such quantity that the pH is not below 5.3	
	Pasteurized process cheese food, etc. Used as an acidifying agent in such quantity that the pH is not below 5.0	
	Pasteurized process cheese spread, pasteurized cheese spread, etc. Used as an acidifying agent in such quantity that the pH is not below 4.0	
	Pasteurized neufchatel cheese spread with other foods. Used in such quantity that the pH of the finished food is less than 4.2	
	Cold pack cheese, cold pack cheese food, etc. Used as an acidifying agent in such quantity that the pH is not below 4.5	
Adipic Acid	Buffer and neutralizing agent	
	Confections, up to	3.0%
Aluminum Ammonium Sulfate Aluminum Calcium Sulfate Aluminum Potassium Sulfate (Alum, aluminum and potassium sulfate) Aluminum Sodium Sulfate Aluminum Sulfate	Acid	
	Milling, baking, and cereal industries	
	Baking powder ingredients	
Ammonium Bicarbonate Ammonium Carbonate	Alkali	
	Leavening agent in the production of thin baked goods	
	Various cookies and crackers	0.25%
	Confections	0.5%
	Cacao products. For each 100 parts by weight of cacao nibs used (before shelling from the beans), the total amount of alkali does not exceed the neutralizing value of 3 parts by weight of anhydrous potassium carbonate	
Ammonium Hydroxide	Alkali	
	Cacao product. See use for Ammonium Bicarbonate	
Ammonium Phosphate, dibasic Ammonium Phosphate, monobasic	Buffers	
	Leavening agent	
	Acidic constituent of baking powder	
	Bread improver. Up to	10.0%
	Bakery products. Bread, rolls, buns, etc. Per 100 parts by weight of flour, up to	0.25 parts

Name	Function, Usage	Levels of Use
Ammonium Sulfate	Buffer	
	Bakery Products. See use for Ammonium Phosphate	
Calcium Carbonate	Alkali	
	Baking powder, up to	50%
	To reduce excessive acidity in wine	
	Neutralizer for ice cream and ice cream sirups	
	Confections	2.5%
Calcium Chloride	Confections	0.25%
Calcium Gluconate	Buffer	
	Confections	0.25%
Calcium Hydroxide (Calcium hydrate)	Alkali	
	Calcium sucrate, or saccharate, made up of three parts of sugar to one part of calcium hydroxide, is used to standardize acidity of frozen dairy products	
	Used to stabilize the potassium iodide of iodized salt	0.1%
	To reduce excessive acidity in wine	
	Sour-cream butter neutralizer	
	Canned peas. In such quantity that the pH does not exceed 8.0	
Calcium Lactate	Buffer	
	Constituent of some baking powders	
	Confections	0.25%
Calcium Oxide (Lime)	Alkali	
	Neutralizer in dairy industry (ice-cream mixes)	
	Sour-cream butter	
	Confections	0.25%
	In manufacture of tripe, sufficient for purpose	
Calcium Sulfate	Creamed cottage cheese	
Carbonate, Potassium Carbonate, Potassium bi-	Alkali	
	Used in combination with potassium hydroxide in extraction of color from annatto	
	Confections	3.0%
	Cacao products. Same as for Ammonium Carbonate	
Carbonate, Sodium Carbonate, Sodium sesqui-	Alkali	
	Neutralizer for butter, cream, fluid milk, ice cream	
	Processing of olives before canning	
	Cacao products. Same as for Ammonium Carbonate	
	Canned peas. Same as for Magnesium Carbonate	
Carbonate, Sodium bi-	Alkali	
	Prepared pancake, biscuit, muffin mixes	
	Leavening agent in baking powders	
	Various crackers and cookies	
	Tomato soup (adjust acidity)	
	Neutralizer for ices and sherbets; sirups for frozen products	
	Sour-cream butter	
	Confections	1.0%
	Cacao products. Same as for Ammonium Carbonate	
	Self-rising flours, self-rising white and yellow cornmeals. Combined weight of acid-reacting substances (monocalcium	

Name	Function, Usage	Levels of Use
Carbonate, Sodium bi- (cont'd)	and dicalcium phosphate, sodium acid pyrophosphate) and sodium bicarbonate per 100 lbs of flour, up to	4.5 lbs
	Canned peas. Same as for Magnesium Carbonate	
	Tomato paste. May be used to neutralize part of the tomato acids	
Citrate, Calcium Citrate, Sodium	Buffers	
	Confections	2.0%
	Jellies, jams. Sodium citrate or sodium potassium tartrate, or combination thereof, per 100 lbs of saccharine ingredient, up to	3 oz
Citric Acid	Acid	
	Neutralizer after lye peeling	
	Adjustment of pH of fruit juices, wines, jams, jellies, jelly candies, canned fruit, carbonated beverages, frozen fruit, canned vegetables, frozen dairy products	
	Cheese spread	0.75%
	Sherbet	0.32%
	Confectionery. Not more than	4.0%
	Canned figs	
	Dried egg whites	
	Cheese products. Same as for Acetic Acid	
	Mayonnaise, salad dressing, french dressing. May be mixed with vinegar in such quantity that the weight of the citric acid is not greater than 25% of the weight of acids of the vinegar calculated as acetic acid	
	Fruit butter, jelly, preserves, jams. May be added in amount sufficient to compensate for deficiency of fruit acidity	
	Canned vegetables. Citric acid or a vinegar, in the cases of all vegetables (except artichokes, in which such ingredient is prescribed, and except canned mushrooms, in which no such ingredient is permitted), in a quantity not more than sufficient to permit effective processing by heat without discoloration or other impairment. Artichokes—citric acid or vinegar is added in such quantity as to reduce the pH of the finished canned vegetable to 4.5 or below	
	Fresh beef blood. Citric acid or sodium citrate with or without water, may be added to blood in an amount up to 0.2% of the total mixture	
Fumaric Acid	Acid	
	Leavening agent	
	Dry acid for dessert powders, etc.	
	Confectionery. Up to	3.0%
Glucono-delta-Lactone	Acid	
	Leavening agent	
	Jelly powders, soft-drink powders where dry food acid is desired	
	Used in conjunction with calcium citrate in production of alginate jellies	
Hydrochloric Acid	Acid, modifier for food starch	
	Hydrolytic agent used in manufacture of sodium glutamate, gelatin	
	Conversion of cornstarch to sirup	0.012%
	Adjustment of pH in brewing industry, up to	0.02%

Name	Function, Usage	Levels of Use
Lactic Acid	Acid	
	Used as acidulant in beverages, candy	
	Olives, used in brine as acidulant and preservative	0.2%
	Brewing industry. Up to	0.05%
	Dried egg whites	
	Cottage cheese	
	Confections	2.0%
	Bread, rolls, buns, etc. In such quantity that the pH of the finished bread is not less than 4.5	
	Cheese products. Same as for Acetic Acid	
	Frozen desserts, sherbets, and ices	
	Fruit jelly, butter, preserves, jams. Sufficient amount may be added to compensate for deficiency of fruit acidity	
Magnesium Carbonate	Alkali	
	Neutralizer for sour-cream butter, ice cream	
	Cacao products. Same as for Ammonium Carbonate	
	Mixed with benzoyl peroxide for bleaching flour	
	Mixed with benzoyl peroxide for bleaching milk for certain cheeses	
	Canned peas. May be used in such quantity that the pH does not exceed 8.0	
Magnesium Hydroxide	Alkali	
	Canned peas. In such quantity that the pH does not exceed 8.0	
Magnesium Oxide	Alkali	
	Used as neutralizer in frozen dairy products, butter	
	Cacao products. Same as for Ammonium Carbonate	
	Canned peas. May be used in such quantity that the pH does not exceed 8.0	
Malic Acid	Acid	
	Frozen dairy products, beverages, bakery products, etc.	
	Confectionery. Up to	4.0%
	Fruit butter, jelly, jams, preserves. Sufficient amount may be added to compensate for deficiency of fruit acidity. Artificially sweetened preserves	
Phosphate, Calcium, monobasic (Calcium acid phosphate)	Buffer	
	Prepared mixes (pancake, muffin, cake, biscuit)	1.0 - 1.5%
	Leavening ingredient for various crackers and cookies	0.05 - 0.20%
	Pancake flour	2.5%
	Self-rising flours, self-rising white and yellow corn-meals. Same as for Carbonate, Sodium bi-	
	Phosphated flour	0.25 - 0.75%
	Artificially sweetened jelly and preserves	
	Canned potatoes, canned green or red sweet peppers	
	Canned tomatoes	
Phosphate, Calcium, tribasic	Buffer	
	Used for pH adjustment in frozen dairy products	0.0016 - 0.005%
	Beverages	0.09 - 0.1%
	Confectionery	0.0025 - 0.006%
	Baked goods	0.004 - 0.03%
Phosphate, Sodium, dibasic (Disodium phosphate)	Buffer	
	Used to adjust acidity of various foods	
	Chocolate products	0.4 - 0.8%

Name	Function, Usage	Levels of Use
Phosphate, Sodium, dibasic (cont'd)	Evaporated milk. Up to	0.1%
	Beverages	0.03 - 0.1%
	Sauces and toppings	0.14 - 0.25%
	Enriched farina	0.5 - 1.0%
	Macaroni products and enriched macaroni products	0.5 - 1.0%
	Pumping pickle for curing hams, shoulders, etc., up to	5.0%
	Cured hams, shoulders, etc. Up to	0.5%
	Chopped ham. Up to	0.5%
Phosphate, Sodium, monobasic	Buffers	
Phosphate, Sodium, tribasic	Prepared cereal	1.6%
Phosphate, Sodium Aluminum	Buffer	
	Self-rising flour. The combined weight of acid-reacting substance and sodium bicarbonate, per 100 lbs of flour is no more than 4.5 lbs	
Phosphate, Sodium Acid pyro-	Buffer	
	Used as slow-acting acid constituent of a leavening mixture for self-rising and prepared cake, doughnut, waffle, and other types of flours and mixes	
	Muffin mix	1.0%
	Cup-cake mix	0.37%
	Self-rising flour, enriched self-rising flour. Combined weight of acid-reacting substances (monocalcium and dicalcium phosphate, sodium acid pyrophosphate) and sodium bicarbonate must not exceed 4.5 lbs per 100 lbs of flour	
Phosphoric Acid	Acid	
	Soft drinks. Up to	1.0%
	Imitation jellies	0.10 - 0.25%
	Adjust pH in brewing industry, up to	0.035%
	Frozen dairy products, bakery products, candy, etc.	
	Dried egg whites	
	Cheese products. Same as for Acetic Acid	
Potassium Citrate	Buffer	
	Confections	1.0%
	Artificially sweetened jellies and preserves	
Potassium Hydroxide	Alkali	
	Used in combination with potassium carbonate for extraction of color from annatto seed	
	Peeling agent for tubers and fruits	
	Cacao products. Same as for Ammonium Carbonate	
Sodium Citrate	Buffer	
	Used to control acidity and retain carbonation in beverages	
	Frozen dairy products	
	Frozen fruit drinks	
	Confections	1.0%
	Fruit jelly, preserves, jams. For each 100 lbs of saccharine ingredient, up to	3 oz
	Fresh beef blood. Citric acid or sodium citrate, with or without water, may be added to blood in an amount up to 0.2% of the total mixture	

Name	Function, Usage	Levels of Use
Sodium Hydroxide	Alkali, modifier for food starch	
	Glazing agent for pretzels	
	Peeling agent for tubers and fruits	
	Refining process for vegetable oils and animal fats to neutralize free fatty acids	
	Sour-cream butter neutralizer	
	Cacao products. Same as for Ammonium Carbonate	
	Canned peas. In such quantity that alkalinity does not exceed pH 8.0	
Sodium Metasilicate	Alkali	
	Used as peeling solution for peaches	1.0 - 3.0%
	Denuder for tripe, sufficient for purpose	
Succinic Acid	Acid	
Sulfuric Acid	Acid, modifier for food starch	
	Used for adjustment of pH in brewing industry, up to	0.02%
Tartaric Acid	Acid	
	Acidic constituent of some baking powders	
	Used to adjust acidity of frozen dairy products, jellies, bakery products, beverages, confections	
	Dried egg whites	
	Confectionery. Up to	4.0%
	Artificially sweetened preserves	
Tartrate, Potassium Acid (Potassium bitartrate; cream of tartar)	Acid, buffer	
	Acid constituent of some baking powders	
	Miscellaneous confectionery products	0.05 - 0.25%
Tartrate, Sodium Potassium (Rochelle salts)	Buffer	
	Used as buffer in confections	
	Fruit jelly, preserves, jams. For each 100 lbs of saccharine ingredient, up to	3 oz
	Cheeses	
Vinegar	Acid	

GROUP 8

FOOD COLORS

GROUP 8: FOOD COLORS

Name	Function, Usage	Levels of Use
Annatto (extract and seed) (Arnotta, extract; Annotta, extract)	Vegetable dye from Bixa orellana L.	
	Used for dairy products (butter, cheese, cottage cheese, buttermilk)	
	Coloring meat-product casings such as bologna and frankfurters	
	Buttermilk	0.0002 - 0.02%
	Margarine	0.009 - 0.03%
	Beverages	0.001 - 0.0025%
	Ice cream, ices	0.005 - 0.02%
	Baked goods (annatto seed)	0.005 - 0.01%
	Baked goods	0.2%
	Cake mixes	0.004 - 0.015%
	Breakfast cereals	0.2%
Beet Juice		
Beet Powder		
Bixin and Norbixin (Coloring components of Annatto; see Annatto)		
Calcium Carbonate		
Caramel	Brown coloring	
	Ice cream, baked goods, soft drinks, confectionery, and others	
Carbon Black (prepared by the "impingement" or "channel" process)	Black food coloring	
	Confectionery. Up to	0.4%
Carmine Carminic Acid	Aluminum lake of cochineal	
	Red applesauce	
	Confectionery	0.0002 - 0.01%
	Baked goods	0.0005 - 0.03%
	Meats	0.001 - 0.004%
	Spices	0.01 - 0.02%
Carotenal, Beta-apo-8'-	Coloring agent	
	Solid or semisolid foods, per pound, up to	15 mg
	Liquids, per pint, up to	15 mg
Carotene	Vegetable dye	
	Butter	1.0 - 4 mg/lb
	Margarine	1.5 - 3 mg/lb
	Shortening	2.5 - 4 mg/lb
	Skim milk, buttermilk, cottage cheese	
Carrot Oil		
Citrus Red No. 2	Used in coloring of mature oranges	
Cochineal	Source of carmine and carminic acids: Coccus cacti	
	Meat products	0.0007 - 0.01%
	Beverages	0.0002 - 0.01%
	Confectionery	0.005 - 0.03%
	Baked goods	0.01 - 0.02%
	Spices	

Name	Function, Usage	Levels of Use
Cottonseed Flour, cooked (partially defatted and toasted)		
Ferrous Gluconate		
FD&C Blue No. 1 (Brilliant blue) FD&C Blue No. 2 (Indigo carmine) FD&C Green No. 1 (Guinea green B) FD&C Green No. 2 (Light green S F yellowish)	Bottled soft drinks	
FD&C Green No. 3 (Fast green FCF)	Mint-flavored jelly	0.00013%
FD&C Red No. 2 (Amaranth)	Breakfast cereals Imitation jellies Bottled soft drinks	0.0004% 0.005 - 0.008%
FD&C Red No. 3 (Erythrosine) FD&C Violet No. 1	Canned fruit cocktail, fruit salad Cherry-pie mix	0.0056% 0.01%
FD&C Yellow No. 5 (Tartrazine)	Prepared breakfast cereal Imitation strawberry jelly Bottled soft drinks	0.004% 0.002%
FD&C Yellow No. 6 (Sunset yellow FCF)	Bottled soft drinks	
FD&C Lakes (Aluminum or calcium lakes of FD&C certified colors)	Used for dyeing shell eggs	
Grapeskin Extract		
Iron Oxides		
Paprika and Paprika Oleoresin		
Riboflavin		
Saffron	Vegetable dye prepared from American saffron (safflower)	
	Meat products	
Titanium Dioxide	Colorant	
	White pigment for candy. Up to Gums, marking ink for confectionery	0.4%
Tumeric and Curcumin	Vegetable dye	
	Meat products	
Xanthophyll		

GROUP 9

NON-NUTRITIVE AND SPECIAL DIETARY SWEETENERS

GROUP 9: NON-NUTRITIVE AND SPECIAL DIETARY SWEETENERS

These sweeteners are used as substitutes for sugars in such products as the following:

Beverages
Canned fruit products
Canned vegetables
Frozen desserts
Gelatin
Jellies, jams, and marmalades
Baked goods
Salad dressings
Frozen fruits

Name	Function, Usage	Levels of Use
Cyclamates (Cyclohexylsulfamates) Calcium Cyclamate Magnesium Cyclamate Potassium Cyclamate Sodium Cyclamate	Sweetening agents Artificially sweetened canned peaches, apricots, pears, cherries, fruit cocktail, figs, pineapple Artificially sweetened fruit jelly preserves and jam. Artificial sweetening ingredients as follows: Saccharin, sodium saccharin, calcium saccharin, sodium cyclamate, potassium cyclamate, calcium cyclamate, or any combination of these	
Saccharin (2,3-dihydro-3-oxo-benzisosulfonazole) Ammonium Saccharin Calcium Saccharin Sodium Saccharin	Sweetening agents Beverages Baked goods Artificially canned fruits. Sodium saccharin, saccharin, calcium and sodium cyclamate may be used as sweetening ingredients Artificially sweetened jellies, jams, and preserves. Artificial sweetening ingredients as follows: Saccharin, sodium saccharin, calcium saccharin, sodium cyclamate, potassium cyclamate, calcium cyclamate, or any combination of these	0.001 - 0.012% 0.0012%
Sorbitol	Stabilizer and sweetener in nonstandardized frozen desserts for special dietary use 15 g/avg serving, 40 g/day total consumption. In food, up to	7.0%
Xylitol	Sweetener Special dietary uses: Marmalades and jams other than those for which standards of identity have been promulgated	

GROUP 10

NUTRIENT SUPPLEMENT

GROUP 10: NUTRIENT SUPPLEMENT

Name	Function, Usage	Levels of Use
Alanine (L- and DL- forms)	Amino acid	
Aluminum Nicotinate	Source of niacin in foods for special dietary use	
p-Aminobenzoic Acid	B-complex factor	
	Per day, up to	30 mg
Arginine (L- and DL- forms)	Essential amino acid	
Ascorbic Acid (Vitamin C)	Anti-scorbutic vitamin	
	Fruit juices, etc.	0.02 - 0.04%
	Frozen concentrated grape juice, orangeade, and other fruit drinks	
	Carbonated beverages	
Aspartic Acid (L- and DL- forms)	Amino acid	
Betaine, Anhydrous Betaine Hydrochloride	Dietary supplement	
	Per day, up to	100 mg
Biotin (Vitamin H)	Essential nutrient	
Boron Sources: Boric Acid Sodium Borate	Dietary supplements	
	Boron per day, up to	0.1 mg
Calcium Sources (harmless calcium salts):	Mineral supplements	
Calcium Carbonate	Prepared breakfast cereal	0.7%
Calcium Citrate	White cornmeal	0.25%
Calcium Glycerophosphate	Infant dietary formula	
Calcium Oxide	Per lb of enriched flour, enriched bromated flour,	
Calcium Phosphate, monobasic, dibasic, tribasic	enriched macaroni, and noodle products (as calcium)	500 - 625 mg
	Per lb of enriched self-rising flour (as calcium)	1500 mg
Calcium Pyrophosphate	Per lb of enriched farina (as calcium)	500 mg
Calcium Sulfate	Per lb of enriched cornmeal, enriched corn grits (as calcium)	500 - 750 mg
	Per lb of enriched bread, rolls, etc. (as calcium)	300 - 800 mg
Carotene (Provitamin A, Beta carotene)	Vitamin-A precursor	
	Nutrient in skim milk, vegetable shortening, margarine	
	Margarine, per pound	5000 - 13000 USP units
Choline Bitartrate Choline Chloride Ferric Choline Citrate	Dietary supplement	
Citrus Bioflavonoids	Vitamin-P complex	
	Daily intake, up to	1 g
Cobalt Sources: Cobalt Carbonate Cobalt Chloride Cobalt Gluconate Cobalt Sulfate	Mineral supplement	
	Cobalt per day, up to	1 mg

Name	Function, Usage	Levels of Use
Copper Sources: Cupric Chloride Cupric Gluconate Cupric Sulfate Cupric Oxide	Mineral supplement Copper per day up to In any food, up to	 2 mg 0.005%
Cysteine (L- form)	Essential amino acid Bakery products. Per 100 lbs flour	 0.009 lbs
Cystine (L- and DL- forms)	Amino acid	
Fluorine Sources: Calcium Fluoride Hydrofluosilicic Acid Potassium Fluoride Sodium Fluoride Sodium Silicofluoride	Fluoridation of water	
Folic Acid	Nutrient Per day (except on prescription), up to	 0.10 mg
Histidine (L- and DL- forms)	Essential amino acid	
Inositol	Dietary supplement	
Iodine Sources:	Essential nutrient	
Iodine (from dehydrated kelp)	Iodine per day, up to	0.7 mg
Cuprous Iodide	Table salt, up to	0.01%
Potassium Iodate	Dietary supplement, iodine per day, up to	0.15 mg
Potassium Iodide	Table salt, up to Dietary supplement, iodine per day, up to	0.01% 0.15%
Iron Sources: Iron (Reduced iron, iron powder) Iron Salts Ferric Choline Citrate Ferric Phosphate Ferric Pyrophosphate Ferric Sodium Pyrophosphate (Sodium iron pyrophosphate) Ferrous Fumarate Ferrous Gluconate Ferrous Lactate Ferrous Sulfate	Mineral supplement Prepared breakfast cereal Poultry stuffing Per lb of enriched flour, enriched bromated flour, enriched self-rising flour, enriched macaroni and noodle products Enriched farina, per lb Per lb of enriched cornmeal, enriched corn grits Per lb of enriched bread, rolls, etc. Iron salts may be used for enriched products if harmless and assimilable	 13 - 16.5 mg 13 mg 13 - 26 mg 8 - 12.5 mg
Isoleucine (L- and DL- forms)	Essential amino acid	
Leucine (L- and DL- forms)	Essential amino acid	
Linoleic Acid (prepared from edible fats and oils and free from chick-edema factor)	Essential fatty acid	
Liver-stomach concentrate (with intrinsic factor complex)	Dietary supplement	
Lysine (L- and DL- forms) l-Lysine Monohydrochloride	Essential amino acids Fortification of specialty bread and cereal mixes, of weight of flour	 0.25 - 0.5%

Name	Function, Usage	Levels of Use
Magnesium Sources: Magnesium Oxide Magnesium Phosphate (dibasic and tribasic) Magnesium Sulfate	Mineral supplement	
Manganese Sources: Manganese Chloride Manganese Citrate Manganese Gluconate Manganese Glycerophosphate Manganese Hypophosphite Manganese Sulfate Manganese Oxide Manganous Oxide	Mineral supplement	
DL-Methionine	Essential amino acid	
	Per day, up to	200 mg
Molybdenum Sources: Ammonium Molybdate Sodium Molybdate Molybdenum Sesquioxide Molybdenum Trioxide	Mineral supplement	
	Per day, up to	2 mg
Niacin (Nicotinic Acid)	Essential nutrient	
Niacinamide (Nicotinic amide, Nicotinamide)	Prepared breakfast cereal, peanut butter, baby cereals	0.002 - 0.005%
Aluminum Nicotinate	Per lb of enriched flour, enriched bromated flour, enriched self-rising flour	16 - 20 mg
	Enriched farina. Per lb	16 - 20 mg
	Enriched cornmeal, enriched corn grits. Per lb	16 - 24 mg
	Enriched macaroni and noodle products. Per lb	27 - 34 mg
	Enriched bread, rolls, etc. Per lb	10 - 15 mg
Nickel Sulfate	Mineral supplement	
	Nickel per day, up to	1 mg
d-Pantothenamide	Source of pantothenic acid activity in foods for special dietary use	
Pantothenate, Calcium Pantothenate, Sodium d-Pantothenyl Alcohol	B-complex vitamin	
Phenylalanine (L- and DL-forms)	Essential amino acid	
Phosphorous Sources: Calcium Phosphate (monobasic, dibasic, and tribasic) Magnesium Phosphate (dibasic and tribasic) Potassium Glycerophosphate Sodium Phosphate (monobasic, dibasic, and tribasic)	Mineral supplements	
	Constituents of formulated mineral supplements for cereal products, particularly breakfast foods such as farina	
	Prepared cereals, up to	0.5%
Potassium Chloride	Substitute for sodium chloride in low-sodium dietary foods	
Proline (L- and DL- forms)	Amino acid supplement	
Pyridoxine Hydrochloride (Vitamin B_6)	B-complex vitamin	
	Evaporated milk-base foods for infants	

Name	Function, Usage	Levels of Use
Riboflavin (Vitamin B_2, Lactoflavin, Vitamin G)	B-complex vitamin	
	Dry baby cereals, poultry stuffing, peanut butter, prepared breakfast cereals	0.0001 - 0.0005%
	Per lb of enriched flour, enriched bromated flour, enriched self-rising flour	1.2 - 1.5 mg
	Enriched cornmeal, enriched corn grits. Per lb	1.2 - 1.8 mg
	Enriched macaroni and noodle products. Per lb	1.7 - 2.2 mg
	Enriched bread, rolls, etc. Per lb	0.7 - 1.6 mg
Riboflavin-5-Phosphate	More soluble form of riboflavin	
Rutin (Quercetin-3-Rutinoside)	Dietary supplement for capillary fragility	
	Daily intake, up to	50 mg
Serine (L- and DL- forms)	Amino acid supplement	
Thiamine Hydrochloride (Vitamin B_1 hydrochloride, Aneurine hydrochloride)	Vitamin supplement	
	Prepared breakfast cereals, peanut butter, poultry stuffing, baby cereals, skim milk, bottled soft drinks	0.0001 - 0.0009%
	Per lb of enriched flour, enriched bromated flour, enriched self-rising flour	2.0 - 2.5 mg
	Enriched farina. Per lb	2.0 - 2.5 mg
	Per lb of enriched cornmeal, enriched corn grits	2 - 3 mg
	Enriched macaroni and noodle products. Per lb	4 - 5 mg
	Enriched bread, rolls, etc. Per lb	1.1 - 1.8 mg
Thiamine Mononitrate	More stable form of thiamine in dry mixes	
	Uses similar to those listed for Thiamine Hydrochloride	
Threonine (L- and DL- forms)	Essential amino acid	
Tocopherols Alpha Tocopherol Acetate	Vitamin E supplements	
Tryptophane (L- and DL- forms)	Amino acid	
Valine (L- and DL- forms)	Essential amino acid	
Vitamin A Vitamin A Acetate Vitamin A Palmitate	Anti-infective, anti-xerophthalmic vitamin	
	Mellorine (vegetable-fat imitation ice cream)	
	Skim milk, dietary infant formula	
	Blue cheese, gorgonzola cheese. If milk is bleached, vitamin A is added to the curd in such quantity as to compensate for the vitamin A or its precursors destroyed in the bleaching process, and artificial coloring is not used.	
	Oleomargarine, per pound	15000 USP units
Vitamin B_{12} (Cyanocobalamin)	Anti-pernicious anemia factor	
Vitamin D_2 (Calciferol, Irradiated ergosterol) Vitamin D_3 (Activated 7-dehydrocholesterol)	Nutritional factors	
	Prepared breakfast cereal, Mellorine (vegetable-fat imitation ice cream), Vitamin-D milk, evaporated milk, skim milk, margarine, infant dietary formula	
	Per lb of enriched flour, enriched bromated flour, enriched self-rising flour, enriched cornmeal and grits, enriched macaroni and noodle products	250 - 1000 USP units
	Enriched farina. Per lb	250 USP units
	Enriched bread, rolls, etc. Per lb	150 - 750 USP units
	Evaporated milk. Per fluid ounce of the finished product	25 USP units

Name	Function, Usage	Levels of Use
Yeast, Dried	Dietary source of folic acid	
Yeast, Dried, Irradiated		
Yeast, Torula, Dried	Folic acid per gram of yeast	.04 mg
	Pteroylglutamic acid per gram of yeast	.008 mg
	Enriched farina. Irradiated yeast may be added as source of vitamin D	
	Enriched cornmeals and corn grits	
	Bakery products	
Zinc Sources:	Mineral supplement	
Zinc Chloride		
Zinc Gluconate		
Zinc Oxide		
Zinc Stearate (prepared from stearic acid free from chick-edema factor)		
Zinc Sulfate		

GROUP 11

FLAVORING AGENTS

Sub-Group A: Synthetic Flavors

(The amounts listed as "average maximum parts per million" are not tolerance limits and are often exceeded in use. A discussion of the meaning and application of these figures is found in Food Technology, 19, No. 2, part 2, 1965.)

ACETAL
Acetaldehyde diethyl acetal

Chemical Formula: $CH_3CH(OCH_2CH_3)_2$

Flavors in which used:
Apple, apricot, banana, peach, whiskey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7.3
Ice cream, ices, etc.	52
Candy	39
Baked goods	6, 120

ACETALDEHYDE
Ethanal

Chemical formula: CH_3CHO

Flavors in which used:
Berry, butter, chocolate, apple, apricot, banana, grape, peach, black walnut, rum, wine

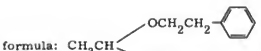
Natural food occurrence:
Apples, broccoli, cheese, coffee, grapefruit, grape juice (concord), grapes, lemon, milk skim (heated 121°, 90 min.), onions, oranges, peaches, pears, pineapple, raspberries, strawberries, coffee extract, peppermint oil, anise, cooked beef, cooked chicken

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.9
Ice cream, ices	25
Candy	22
Baked goods	12
Gelatin desserts	6.8
Chewing gum	20, 270

ACETALDEHYDE BENZYL β-METHOXYETHYL ACETAL
(See Benzyl methoxyethyl acetal)

ACETALDEHYDE DIETHYL ACETAL
(See Acetal)

ACETALDEHYDE PHENETHYL PROPYL ACETAL
Acetal R; Pepital

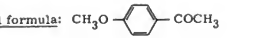


Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	-
Ice cream, ices	-
Candy	2.5
Baked goods	2.5

ACETAL R
(See Acetaldehyde phenethyl propyl acetal)

ACETANISOL
4'-Methoxyacetophenone



Flavors in which used:
Butter, caramel, chocolate, fruit, nut, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.3
Ice cream, ices	2.5
Candy	4.6
Baked goods	5.8
Chewing gum	840

ACETATE C-8
(See Octyl acetate)

ACETATE C-9
(See Nonyl acetate)

ACETATE C-10
(See Decyl acetate)

ACETATE C-11
(See 10-Undecen-1-yl acetate)

ACETATE C-12
(See Lauryl acetate)

ACETATE PA
(See Allyl phenoxyacetate)

ACETIC ACID
Ethanoic acid

Chemical formula: CH_3COOH

Flavors in which used:
Raspberry, strawberry, butter, butterscotch, chocolate, grape, rum, wine, spice, tobacco, cheese, vinegar

Natural food occurrence:
Apples, cheese, cocoa, coffee, grapes, grape juice (concord), milk skim (irradiated), oranges, parsley family, peaches, pineapple, raspberries, strawberries, bay and bay-leaves extract

Foods in which used:	Approx. Avg Maximum ppm
Beverages	39
Ice cream, ices	32
Candy	52
Baked goods	38
Condiments	5,900
Gelatin desserts	15
Chewing gum	60

ACETIC ETHER
(See Ethyl acetate)

(tri-)ACETIN

Chemical formula: $CH_3COOCH_2CH(OOCCH_3)CH_2(OOCCH_3)$

Flavors in which used:
Butter, butterscotch, fruit, nut, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	190
Ice cream, ices	60
Candy	560
Baked goods	1,000
Chewing gum	4,100

ACETOACETIC ESTER
(See Ethyl acetoacetate)

ACETOIN
3-Hydroxy-2-butanone, Acetyl methyl carbinol

Chemical formula: $CH_3COCHOHCH_3$

Flavors in which used:
Raspberry, strawberry, butter, butterscotch, caramel, coconut, coffee, fruit, liquor, rum, nut, walnut, vanilla, cream soda, cheese

Natural food occurrence:
Broccoli, grapes, pears, cultured dairy products, cooked beef, cooked chicken

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7.4
Ice cream, ices	3.3
Candy	12
Baked goods	28
Margarine	0.80, 50
Gelatin desserts	0.60, 21
Cottage cheese	7
Shortening	8

2'ACETONAPHTHONE
(See Methyl β-naphthyl ketone)

ACETOPHENONE
Methyl phenyl ketone

Chemical formula:

Flavors in which used:
Strawberry, floral, fruit, cherry, almond, walnut, tobacco, vanilla, tonka

Natural food occurrence:
Strawberries, tea

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.98
Ice cream, ices	2.4
Candy	3.6
Baked goods	5.6
Gelatin desserts	7
Chewing gum	0.60, 20

p-ACETYL ANISOLE
(See Acetanisole)

ACETYL BENZENE
(See Acetophenone)

ACETYL BUTYRYL
(See 2,3-Hexandione)

ACETYL ISOBUTYRYL
(See 4-Methyl-2,3-pentanedione)

ACETYL o-CRESOL
(See o-Tolyl acetate)

ACETYL p-CRESOL
(See p-Tolyl acetate)

ACETYL EUGENOL
(See Eugenyl acetate)

ACETYL ISOEUGENOL
(See Isoeugenyl acetate)

ACETYLFORMALDEHYDE
(See Pyruvaldehyde)

ACETYLFORMIC ACID
(See Pyruvic acid)

ACETYL METHYL CARBINOL
(See Acetoin)

ACETYL NONYRYL
(See 2,3-Undecadione)

ACETYL PELARGONYL
(See 2,3-Undecadione)

ACETYL PENTANOYL
(See 2,3-Heptanedione)

3-ACETYLPROPIONIC ACID
(See Levulinic acid)

ACETYL PROPIONYL
(See 2,3-Pentanedione)

p-ACETYL TOLUENE
(See 4'-Methyl acetophenone)

ACETYL VALERYL
(See 2,3-Heptanedione)

ACETYL VANILLIN
(See Vanillin acetate)

ACHILLEIC ACID
(See Aconitic acid)

ACONITIC ACID

Chemical formula: $\begin{matrix} CHCOOH \\ \| \\ CCOOH \\ | \\ CH_2COOH \end{matrix}$

Flavors in which used:
Fruit, brandy, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2, 0.20
Ice cream, ices	0.60
Candy	30, 0.60
Baked goods	15, 0.60
Liquor	20
Chewing gum	28

ADIPIC ACID
1,4-Butanedicarboxylic acid

Chemical formula: $\begin{matrix} CH_2CH_2COOH \\ | \\ CH_2CH_2COOH \end{matrix}$

Flavors in which used:
Fruit

Natural food occurrence:
Meats

Foods in which used:	Approx. Avg Maximum ppm
Beverages	40
Gelatin desserts	5,000

ALCOHOL C-7
(See Heptyl alcohol)

ALCOHOL C-8
(See 1-Octanol)

ALCOHOL C-9
(See Nonyl alcohol)

ALCOHOL C-10
(See 1-Decanol)

ALCOHOL C-11 UNDECYLIC
(See Undecyl alcohol)

ALCOHOL C-12
(See Lauryl alcohol)

ALCOHOL C-16
(See 1-Hexadecanol)

ALDEHYDE C-7
(See Heptanal)

ALDEHYDE C-8
(See Octanal)

ALDEHYDE C-9
(See Nonanal)

ALDEHYDE C-10
(See Decanal)

ALDEHYDE C-11 UNDECYLENIC
(See 9-Undecenal)

ALDEHYDE C-11 UNDECYLIC
(See Undecanal)

ALDEHYDE C-12 LAURIC
(See Lauric aldehyde)

ALDEHYDE C-12 MNA
(See 2-Methylundecanal)

ALDEHYDE C-14 PURE (so-called)
(See γ-Undecalactone)

ALDEHYDE C-14 (Myristic)
(See Myristaldehyde)

ALDEHYDE C-16 PURE (so-called)
(See Ethyl methyl phenylglycidate)

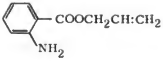
ALDEHYDE C-18 (so-called)
(See γ-Nonalactone)

ALLOMALEIC ACID
(See Fumaric acid)

ALLYL ACETIC ACID
(See 4-Pentenoic acid)

p-ALLYLANISOLE
(See Estragole)

ALLYL ANTHRANILATE
Anthranilic acid, Allyl ester

Chemical formula: 

Flavors in which used:
Citrus fruit, grape

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.1
Ice cream, ices	0.67
Candy	2
Baked goods	0.02, 1
Gelatin desserts	2

ALLYL BUTYRATE
Butyric acid, Allyl ester

Chemical formula: $CH_2{=}CHCH_2OOCCH_2CH_2CH_3$

Flavors in which used:
Butter, fruit, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.2
Ice cream, ices	0.50, 1
Candy	1.3
Baked goods	0.50, 3
Gelatin desserts	1

ALLYL CINNAMATE
Cinnamic acid, Allyl ester

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	1.4
Candy	1.8
Baked goods	2.6

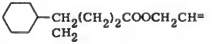
ALLYL CYCLOHEXANEACETATE
Cyclohexaneacetic acid, Allyl ester

Chemical formula: 

Flavors in which used:
Pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.1
Ice cream, ices	1.6
Candy	3.5
Baked goods	4

ALLYL CYCLOHEXANEBUTYRATE
Cyclohexanebutyric acid, Allyl ester

Chemical formula: 

Flavors in which used:
Pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	1.4
Candy	3.3
Baked goods	3.8

ALLYL CYCLOHEXANEHEXANOATE
Cyclohexanehexanoic acid, Allyl ester

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.4
Ice cream, ices	3.3
Candy	8
Baked goods	8.5

ALLYL CYCLOHEXANEPROPIONATE
Cyclohexanepropionic acid, Allyl ester

Chemical formula: 

Flavors in which used:
Pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.7
Ice cream, ices	3.1
Candy	13
Baked goods	7.1
Gelatin and puddings	7.7
Chewing gum	30
Icings	0.20

ALLYL CYCLOHEXANEVALERATE
Cyclohexanevaleric acid, Allyl ester

Chemical formula: 

Flavors in which used:
Pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.2
Ice cream, ices	2.3
Candy	4.4
Baked goods	4.8

ALLYL β-CYCLOHEXYLPROPIONATE
(See Allyl cyclohexanepropionate)

ALLYL 3-CYCLOHEXYLPROPIONATE
(See Allyl cyclohexanepropionate)

ALLYL DISULFIDE

Chemical formula: $(CH_2{=}CHCH_2)_2S_2$

Flavors in which used:
Garlic, onion, spice

Natural food occurrence:
Garlic, leek

Foods in which used:	Approx. Avg Maximum ppm
Meats	7
Condiments	6.5

ALLYL ENANTHATE
(See Allyl heptanoate)

ALLYL 2-ETHYLBUTYRATE
2-Ethylbutyric acid, Allyl ester

Chemical formula: $(CH_3CH_2)_2CHCOOCH_2CH{=}CH_2$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1, 0.50
Candy	2
Gelatin and puddings	1

ALLYL 2-FUROATE
Furoic acid, Allyl ester

Chemical formula: 

Flavors in which used:
Coffee, pineapple

ALLYL 2-FUROATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.53
Ice cream, ices	0.05, 2
Candy	1.6
Baked goods	0.75, 2
Gelatin desserts	1

4-ALLYLGUAIACOL
(See Eugenol)

ALLYL HEPTANOATE
Heptanoic acid, Allyl ester

Chemical formula: $CH_3(CH_2)_5COOCH_2CH{=}CH_2$

Flavors in which used:
Berry, fruit, brandy

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	2.7
Candy	6.4
Baked goods	6.4
Gelatin desserts	2.9
Chewing gum	86

ALLYL HEPTOATE
(See Allyl heptanoate)

ALLYL HEPTYLATE
(See Allyl heptanoate)

ALLYL HEXANOATE
Hexanoic acid, Allyl ester

Chemical formula: $CH_3(CH_2)_4COOCH_2CH{=}CH_2$

Flavors in which used:
Orange, strawberry, apple, apricot, peach, pineapple, tutti fruiti

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7
Ice cream, ices	11
Candy	32
Baked goods	25
Gelatin dessert	22
Chewing gum	210

ALLYL α-IONONE
Cetone V

1-(2,6,6-Trimethyl-2-cyclohexene-1-yl)
1,6-heptadien-3-one

Chemical formula:  $CH{=}CHCOCH_2CH_2CH{=}CH_2$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50
Ice cream, ices	1.4
Candy	2.6
Baked goods	3.1
Gelatin desserts	1
Toppings	2

ALLYL ISOTHIOCYANATE

Chemical formula: $CH_2{:}CHCH_2NCS$

Flavors in which used:
Meat, spice

Natural food occurrence:
Mustard, horseradish, onion

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50, 0.02
Ice cream, ices	0.50
Candy	0.50
Baked goods	5.2
Condiments	52
Meat	87
Pickles	88, 10

ALLYL MERCAPTAN
2-Propene-1-thiol

Chemical formula: $CH_2{=}CHCH_2SH$

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.25
Ice cream, ices	2, 0.50
Candy	0.50
Baked goods	2, 0.50
Condiments	2, 3
Meats	0.50

4-ALLYL-2-METHOXYPHENOL
(See Eugenol)

4-ALLYL-2-METHOXYPHENYL BENZOATE
(See Eugenyl benzoate)

4-ALLYL-2-METHOXYPHENYL FORMATE
(See Eugenyl formate)

ALLYL trans-2-METHYL-2-BUTENOATE
(See Allyl tiglate)

ALLYL NONANOATE
Nonanoic acid, Allyl ester

Chemical formula: $CH_3(CH_2)_7COOCH_2CH{=}CH_2$

Flavors in which used:
Fruit, wine

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.70
Ice cream, ices	3, 0.50
Candy	5
Baked goods	3, 5
Meats	1

ALLYL OCTANOATE
Octanoic acid, Allyl ester

Chemical formula: $CH_3(CH_2)_6COOCH_2CH{:}CH_2$

Flavors in which used:
Pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.7
Ice cream, ices	3.3
Candy	5.1
Baked goods	4
Gelatin desserts	0.10

ALLYL PHENOXYACETATE
Phenoxyacetic acid, Allyl ester

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.82
Ice cream, ices	0.4, 0.004
Candy	2.3
Baked goods	1, 0.02
Gelatin desserts	3

ALLYL PHENYLACETATE
Phenylacetic acid, Allyl ester

Chemical formula: 

Flavors in which used:
Pineapple, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3, 0.06
Ice cream, ices	8
Candy	14
Baked goods	40

ALLYL PROPIONATE
Propionic acid, Allyl ester

Chemical formula: $CH_3CH_2COOCH_2CH{=}CH_2$

Flavors in which used:
Pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3, 0.06
Ice cream, ices	16
Candy	6.5
Baked goods	10

ALLYL SORBATE
Sorbic acid, Allyl ester

Chemical formula: $CH_3CH{=}CHCH{=}CHCOOCH_2CH{=}CH_2$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.86
Ice cream, ices	0.5
Candy	5, 0.50
Baked goods	1
Gelatin desserts	2

ALLYL SULFHYDRATE
(See Allyl mercaptan)

ALLYL SULFIDE

Chemical formula: $(CH_2{=}CHCH_2)_2S$

Flavors in which used:
Fruit, garlic

Natural food occurrence:
Garlic, horseradish

ALLYL SULFIDE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.04
Ice cream, ices	0.06
Candy	0.07
Baked goods	0.05
Condiments	13
Meats	3.7

ALLYLTHIOL
(See Allyl mercaptan)

ALLYL TIGLATE
Tiglic acid, Allyl ester

Chemical formula: $CH_3CH{=}C(CH_3)COOCH_2CH{=}CH_2$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.28
Ice cream, ices	0.50, 0.50
Candy	0.50, 3
Baked goods	0.50, 3

ALLYL 10-UNDECENOATE
10-Undecenoic acid, Allyl ester

Chemical formula: $CH_2{=}CH(CH_2)_8COOCH_2CH{=}CH_2$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1, 0.25
Ice cream, ices	0.50, 0.50
Candy	0.50
Baked goods	0.50

ALLYL UNDECYLENATE
(See Allyl 10-undecenoate)

ALLYL ISOVALERATE
Isovaleric acid, Allyl ester

Chemical formula: $(CH_3)_2CHCH_2COOCH_2CH{=}CH_2$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	8.6
Ice cream, ices	18
Candy	22
Baked goods	15, 48
Gelatin desserts	1

4-ALLYLVERATROLE
(See Eugenyl methyl ether)

AMBRETTOLIDE
(See ω-6-Hexadecenlactone)

o-AMINOMETHYL BENZOATE
(See Methyl anthranilate)

AMMONIUM SULFIDE

Chemical formula: $(NH_4)_2S$

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	5
Condiments	5

AMMONIUM ISOVALERATE
Isovaleric acid, Ammonium salt

Chemical formula: $(CH_3)_2CHCH_2COO^-NH_4^+$

Flavors in which used:
Butter, nut, cheese

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	58
Sirups	0.20

AMYL ACETATE (common)
(See Isoamyl acetate)

ISOAMYL ACETATE (common)
β-Methyl butyl acetate

Chemical formula: $CH_3COOCH_2CH_2CH(CH_3)_2$

ISOAMYL ACETATE (common) (cont'd)

Flavors in which used:
Raspberry, strawberry, butter, caramel, coconut, cola, apple, banana, cherry, grape, peach, pear, pineapple, rum, cream soda, vanilla

Natural food occurrence:
Banana, cocoa

Foods in which used:	Approx. Avg Maximum ppm
Beverages	28
Ice cream, ices	56
Candy	190
Baked goods	120
Gelatin desserts	100
Chewing gum	2,700

ISOAMYL ACETOACETATE

Chemical formula: $CH_3-CH(CH_3)-CH_2-CHO-C(=O)-CH_2-C(=O)-CH_3$

Flavors in which used:
Fruit, apple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4
Ice cream, ices	7
Candy	25
Baked goods	25

AMYL ALCOHOL

Chemical formula: $CH_3(CH_2)_3CH_2OH$

Flavors in which used:
Berry, chocolate, apple, banana, pineapple, liquor, rum

Natural food occurrence:
Cocoa, oranges

Foods in which used:	Approx. Avg Maximum ppm
Beverages	18
Ice cream, ices	15
Candy	35
Baked goods	24
Gelatin desserts	7.7, 50
Chewing gum	150, 340

AMYL ALCOHOL, Commercial
(See Fusel, oil, refined)

ISOAMYL ALCOHOL

Chemical formula: $(CH_3)_2CHCH_2CH_2OH$

Flavors in which used:
Chocolate, apple, banana, brandy, rum

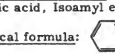
Natural food occurrence:
Apples, cognac, lemons, peppermint, raspberries, strawberries, tea

Foods in which used:	Approx. Avg Maximum ppm
Beverages	17
Ice cream, ices	7.6
Candy	52
Baked goods	24
Gelatin desserts	46
Chewing gum	300
Brandy	100

AMYL ALDEHYDE
(See Valeraldehyde)

ISOAMYL ALDEHYDE
(See 3-Methylbutyraldehyde)

ISOAMYL BENZOATE
Benzoic acid, Isoamyl ester

Chemical formula: 

Flavors in which used:
Berry, apple, cherry, plum, prune, liquor, rum, maple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3
Ice cream, ices	2.5
Candy	3.5
Baked goods	7.4
Gelatin desserts	4.6
Chewing gum	200

AMYL BUTYRATE
Butyric acid, Amyl ester

Chemical formula: $CH_3CH_2CH_2COOCH_2(CH_2)_3CH_3$

Flavors in which used:
Raspberry, strawberry, butter, butterscotch, fruit, apple, apricot, banana, cherry, grape, peach, pineapple, vanilla

Natural food occurrence:
Cocoa

Foods in which used:	Approx. Avg Maximum ppm
Beverages	19
Ice cream, ices	32

AMYL BUTYRATE (cont'd)

Foods in which used (cont'd):	Approx. Avg Maximum ppm
Candy	76
Baked goods	43
Gelatin and puddings	1.4, 0.50
Chewing gum	760
Cherry sirup	58

ISOAMYL BUTYRATE

Butyric acid, Isoamyl ester

Chemical formula: $CH_3CH_2CH_2COOCH_2CH_2CH(CH_3)_2$

Flavors in which used:

Berry, strawberry, butter, butterscotch, chocolate, fruit, banana, cherry, peach, pineapple

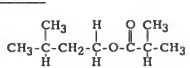
Natural food occurrence:

Cocoa

Foods in which used:	Approx. Avg Maximum ppm
Beverages	13
Ice cream, ices	34
Candy	79
Baked goods	51
Gelatin desserts	60
Chewing gum	570

ISOAMYL ISOBUTYRATE

Chemical formula:



Flavors in which used:

Fruit, banana

Foods in which used:	Approx. Avg Maximum ppm
Beverages	13
Ice cream, ices	34
Candy	71
Baked goods	51
Gelatins and puddings	60
Chewing gum	2,000

γ-AMYL BUTYROLACTONE

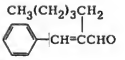
(See γ-Nonalactone)

α-AMYLCINNAMALDEHYDE

α-Amyl β-phenylacrolein Buxine

α-Pentylcinnamaldehyde

Chemical formula:



Flavors in which used:

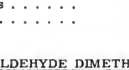
Strawberry, apple, apricot, peach, walnut, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	1.5
Candy	4
Baked goods	4.5
Gelatin desserts	0.03, 0.05
Chewing gum	15

α-AMYLCINNAMALDEHYDE DIMETHYL ACETAL

1,1-Dimethoxy-2-amyl-3-phenyl-2-propene

Chemical formula:



Flavors in which used:

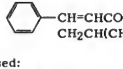
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.80
Ice cream, ices	1.5, 2
Candy	2
Baked goods	2.6

ISOAMYL CINNAMATE

Cinnamic acid, Isoamyl ester

Chemical formula:



Flavors in which used:

Strawberry, butter, caramel, chocolate, cocoa, fruit, peach, pineapple, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.1
Ice cream, ices	4.2
Candy	13
Baked goods	13

α-AMYLCINNAMYL ACETATE

α-Pentylcinnamyl acetate

Chemical formula:

α-AMYLCINNAMYL ACETATE (cont'd)

Flavors in which used:
Chocolate, fruit, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.92
Ice cream, ices	3.5
Candy	3.5
Baked goods	3
Chewing gum	3

α-AMYLCINNAMYL ALCOHOL
α-Pentylcinnamyl alcohol, Buxinol

Chemical formula: $CH_3(CH_2)_3CH_2$ | $CH{=}CCH_2OH$

Flavors in which used:
Chocolate, fruit, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.47
Ice cream, ices	1.5
Candy	1.6
Baked goods	1.5
Chewing gum	2

α-AMYLCINNAMYL FORMATE
α-Pentylcinnamyl formate

Chemical formula: $CH_3(CH_2)_3CH_2$ | $CH{=}CCH_2OOCH$

Flavors in which used:
Chocolate, fruit, maple, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.17
Ice cream, ices	0.93
Candy	1.5
Baked goods	1.5
Chewing gum	1

α-AMYLCINNAMYL ISOVALERATE
α-Pentylcinnamyl isovalerate

Chemical formula: $CH_3(CH_2)_3CH_2$ | $CH{=}CCH_2OOCCH_2CH(CH_3)_2$

Flavors in which used:
Chocolate, fruit, grape, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.36
Ice cream, ices	1.2
Candy	1.3
Baked goods	1.7
Chewing gum	1

AMYL FORMATE
Formic acid, Amyl ester

Chemical formula: $HCOOCH_2(CH_2)_3CH_3$

Flavors in which used:
Strawberry, apple, apricot, banana, cherry, peach, plum, nut, walnut

Natural food occurrence:
Apples

Foods in which used:	Approx. Avg Maximum ppm
Beverages	13
Ice cream, ices	11
Candy	31
Baked goods	8
Chewing gum	170

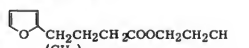
ISOAMYL FORMATE
Formic acid, Isoamyl ester

Chemical formula: $HCOOCH_2CH_2CH(CH_3)_2$

Flavors in which used:
Strawberry, apple, apricot, banana, cherry, currant, peach, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	8.4
Ice cream, ices	14
Candy	22
Baked goods	16
Gelatin desserts	2, 28
Chewing gum	250

ISOAMYL 2-FURANBUTYRATE
2-Furanbutyric acid, Isoamyl ester

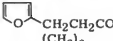
Chemical formula: 

Flavors in which used:
Chocolate, coffee, fruit, whisky

ISOAMYL 2-FURANBUTYRATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.03, 5.0
Ice cream, ices	2.8
Candy	6
Baked goods	8.0, 0.50
Gelatin desserts	5

ISOAMYL 2-FURANPROPIONATE
2-Furanpropionic acid, Isoamyl ester

Chemical formula: 

Flavors in which used:
Chocolate, coffee, fruit, whisky

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.33, 0.02
Ice cream, ices	0.65, 0.33
Candy	3.6, 1.6
Baked goods	3.6, 1.6

α-ISOAMYL FURFURYLACETATE
(See Isoamyl 2-furanpropionate)

α-ISOAMYL FURFURYLPROPIONATE
(See Isoamyl 2-furanbutyrate)

AMYL 2-FUROATE
2-Furoic acid, Amyl ester

Chemical formula: 

Flavors in which used:
Rum, maple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5
Candy	6, 1.5
Baked goods	1
Condiments	10

AMYL HEPTANOATE
Heptanoic acid, Amyl ester

Chemical formula: $CH_3(CH_2)_5COOCH_2(CH_2)_3CH_3$

Flavors in which used:
Lemon, coconut, fruit, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7
Ice cream, ices	3.8
Candy	7.5
Baked goods	3
Gelatin and puddings	3.5
Chewing gum	53

AMYL HEXANOATE
Hexanoic acid, Amyl ester

Chemical formula: $CH_3(CH_2)_4COOCH_2(CH_2)_3CH_3$

Flavors in which used:
Citrus, chocolate, apple, grape, pineapple, honey, liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.3
Ice cream, ices	16
Candy	22
Baked goods	8.3
Gelatin desserts	3.7, 0.30
Chewing gum	110

ISOAMYL HEXANOATE
Hexanoic acid, Isoamyl ester

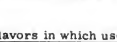
Chemical formula: $CH_3(CH_2)_4COOCH_2CH_2CH(CH_3)_2$

Flavors in which used:
Raspberry, strawberry, apple, pineapple, honey, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7.8
Ice cream, ices	14
Candy	17
Baked goods	15
Gelatin desserts	3.7

ISOAMYL o-HYDROXYBENZOATE
(See Isoamyl salicylate)

2-AMYL-5 (or 6) -KETO-1,4-DIOXANE

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	--
Ice cream, ices	5
Candy	5
Baked goods	5
Shortening	5

ISOAMYL LAURATE
Dodecanoic acid, Isoamyl ester

Chemical formula: $CH_3(CH_2)_{10}COOCH_2CH_2CH(CH_3)_2$

Flavors in which used:
Fruit, liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3, 0.04
Ice cream, ices	6, 0.16
Candy	6, 0.50
Baked goods	6, 0.50

ISOAMYL NONANOATE
Nonanoic acid, Isoamyl ester

Chemical formula: $CH_3(CH_2)_7COOCH_2(CH_2)_3CH_3$

Flavors in which used:
Fruit, cognac, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.5
Ice cream, ices	3.3
Candy	3
Baked goods	4

AMYL OCTANOATE
Octanoic acid, Amyl ester

Chemical formula: $CH_3(CH_2)_6COOCH_2(CH_2)_3CH_3$

Flavors in which used:
Chocolate, fruit, liquor

Natural food occurrence:
Apple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5
Ice cream, ices	3.5
Candy	6.0
Baked goods	3.5
Gelatin desserts	2.1

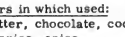
ISOAMYL OCTANOATE
Octanoic acid, Isoamyl ester

Chemical formula: $CH_3(CH_2)_6COOCH_2CH_2CH(CH_3)_2$

Flavors in which used:
Chocolate, fruit, liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6.6
Ice cream, ices	5.1
Candy	7.4
Baked goods	3.5
Gelatin desserts	2.1

ISOAMYL PHENYLACETATE
Phenylacetic acid, Isoamyl ester

Chemical formula:  $CH_2COOCH_2CH_2CH(CH_3)_2$

Flavors in which used:
Butter, chocolate, cocoa, peach, honey, licorice, anise

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5
Ice cream, ices	16
Candy	12
Baked goods	14
Toppings	0.8, 0.25
Gelatin and puddings	3.4, 0.15

α-AMYL β-PHENYLACROLEIN
(See α-Amylcinnamaldehyde)

ISOAMYL PROPIONATE
Propionic acid, Isoamyl ester

Chemical formula: $CH_3CH_2COOCH_2CH_2CH(CH_3)_2$

Flavors in which used:
Raspberry, strawberry, apple, banana, cherry, grape, peach, pineapple, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.8
Ice cream, ices	13
Candy	38
Baked goods	6.1
Gelatin and puddings	0.80
Chewing gum	750

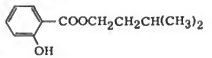
ISOAMYL PYRUVATE
Pyruvic acid, Isoamyl ester

Chemical formula: $CH_3COCOOCH_2CH_2CH(CH_3)_2$

Flavors in which used:
Fruit, rum, maple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.7
Ice cream, ices	8.1
Candy	9.2
Baked goods	12

ISOAMYL SALICYLATE
Salicylic acid, Isoamyl ester

Chemical formula: 

Flavors in which used:
Root beer, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.4
Ice cream, ices	2.9
Candy	3
Baked goods	3

ISOAMYL ISOVALERATE
Isovaleric acid, Isoamyl ester

Chemical formula: $(CH_3)_2CHCH_2COOCH_2CH_2CH(CH_3)2$

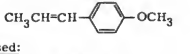
Flavors in which used:
Raspberry, strawberry, apple, apricot, banana, cherry, peach, pineapple, honey, rum, walnut, vanilla, cream soda

Natural food occurrence:
Bananas, peaches

Foods in which used:	Approx. Avg Maximum ppm
Beverages	8.5
Ice cream, ices	14
Candy	33
Baked goods	41
Gelatin and puddings	61, 1
Chewing gum	390
Jellies	10

AMYL VINYL CARBINOL
(See 1-Octen-3-ol)

ANETHOLE

Chemical formula: 

Flavors in which used:
Fruit, honey, licorice, anise, liquor, nut, root beer, sarsaparilla, spice, vanilla, wintergreen, birch beer

Natural food occurrence:
Anise, fennel, star anise

Foods in which used:	Approx. Avg Maximum ppm
Beverages	11
Ice cream, ices	26
Candy	340
Baked goods	150
Chewing gum	1,500
Liquors	1,400

ANGELICA LACTONE
(See ω-Pentadecalactone)

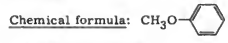
p-ANISALDEHYDE
(See p-Methoxybenzaldehyde)

ANISE CAMPHOR
(See Anethole)

ANISIC ALCOHOL
(See Anisyl alcohol)

ANISIC KETONE
(See 1-(p-Methoxyphenyl)-2-propanone)

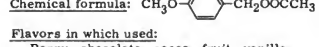
ANISOLE

Chemical formula: 

Flavors in which used:
Licorice, root beer, sarsaparilla, wintergreen, birch beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	9
Ice cream, ices	16
Candy	51
Baked goods	34

ANISYL ACETATE
Acetic acid, Anisyl ester
p-Methoxy benzyl acetate

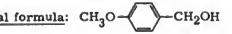
Chemical formula: 

Flavors in which used:
Berry, chocolate, cocoa, fruit, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6.3
Ice cream, ices	8
Candy	15
Baked goods	12
Gelatin desserts	11
Chewing gum	30

ANISYL ACETONE
(See 4-(p-Methoxyphenyl)-2-butanone)

ANISYL ALCOHOL

Chemical formula: 

Flavors in which used:
Chocolate, cocoa, fruit, licorice, vanilla

Natural food occurrence:
Vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7.4
Ice cream, ices	8
Candy	11
Baked goods	12
Gelatin desserts	1.9

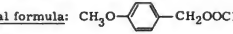
ANISYL BUTYRATE
Butyric acid, Anisyl ester

Chemical formula: 

Flavors in which used:
Fruit, licorice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.1
Ice cream, ices	5.7
Candy	10
Baked goods	13

ANISYL FORMATE
Formic acid, Anisyl ester

Chemical formula: 

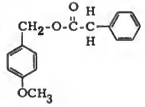
Flavors in which used:
Raspberry, fruit, licorice, vanilla

Natural food occurrence:
Currant, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.2
Ice cream, ices	3.9
Candy	7.9
Baked goods	14
Gelatin desserts	0.20

ANISYL METHYL KETONE
(See 1-(p-Methoxyphenyl)-2-propanone)

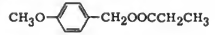
ANISYL PHENYLACETATE

Chemical formula: 

Flavors in which used:
Honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	2.6
Candy	6.6
Baked goods	4.3

ANISYL PROPIONATE
Propionic acid, Anisyl ester

Chemical formula: 

Flavors in which used:
Raspberry, cherry, licorice

Natural food occurrence:
Apple, banana, cherry, peach, pineapple, quince

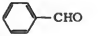
Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.6
Ice cream, ices	6.1
Candy	16
Baked goods	20
Gelatin desserts	0.25

APPLE ACID
(See l-Malic acid)

ARGEOL
(See Santalol (α- and β-))

AUBEPINE LIQUID
(See p-Methoxybenzaldehyde)

BENZALDEHYDE

Chemical formula: 

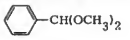
Flavors in which used:
Berry, butter, coconut, apricot, cherry, peach, liquor, brandy, rum, almond, pecan, pistachio, spice, vanilla

BENZALDEHYDE (cont'd)

Natural food occurrence:
Cherries, raspberries, tea, almonds, bitter oil, cajaput oil, cassia bark

Foods in which used:	Approx. Avg Maximum ppm
Beverages	36
Ice cream, ices	42
Candy	120
Baked goods	110
Gelatin and pudding	160
Chewing gum	840
Cordials	32

BENZALDEHYDE DIMETHYL ACETAL

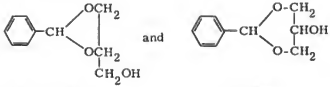
Chemical formula: 

Flavors in which used:
Fruit, cherry, nut, almond

Foods in which used:	Approx. Avg Maximum ppm
Beverages	26
Ice cream, ices	22
Candy	56
Baked goods	45
Gelatin and puddings	50
Alcoholic beverages	60

BENZALDEHYDE GLYCERYL ACETAL

Chemical formula:

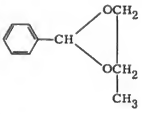


about 60% and about 40%

Flavors in which used:
Fruit, cherry, nut, almond

Foods in which used:	Approx. Avg Maximum ppm
Beverages	21
Ice cream, ices	24
Candy	110
Baked goods	73
Gelatin desserts	100
Chewing gum	840

BENZALDEHYDE PROPYLENE GLYCOL ACETAL
4-Methyl-2-phenyl-m-dioxolane

Chemical formula: 

Flavors in which used:
Fruit, cherry, nut, almond

Foods in which used:	Approx. Avg Maximum ppm
Beverages	34
Ice cream, ices	27
Candy	110
Baked goods	96
Gelatin and puddings	50

BENZENECARBONAL
(See Benzaldehyde)

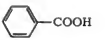
BENZENECARBOXYLIC ACID
(See Benzoic acid)

BENZENEMETHYLAL
(See Benzaldehyde)

BENZILIDENE ACETONE
(See 4-Phenyl-3-buten-2-one)

1,2-BENZODIHYDROPYRONE
(See Dihydrocoumarin)

BENZOIC ACID

Chemical formula: 

Flavors in which used:
Chocolate, lemon, orange, cherry, fruit, nut, tobacco

Natural food occurrence:
Cherry bark, raspberries, tea, anise, cassia bark, cassie, oil of lovage

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7.5
Ice cream, ices	4.8
Candy	8.9
Baked goods	40
Icings	250
Chewing gum	20, 32

BENZOIC ALDEHYDE
(See Benzaldehyde)

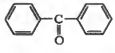
BENZOIN

Chemical formula: 

Flavors in which used:
Butter, butterscotch, fruit, liquor, rum, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.5
Ice cream, ices	0.54
Candy	2
Baked goods	1.4
Gelatin	0.10

BENZOPHENONE

Chemical formula: 

Flavors in which used:
Berry, butter, fruit, apricot, peach, nut, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50
Ice cream, ices	0.61
Candy	1.7
Baked goods	2.4

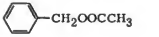
2,3-BENZOPYRROLE
(See Indole)

BENZOYLBENZENE
(See Benzophenone)

BENZOYL EUGENOL
(See Eugenyl benzoate)

BENZYLACETALDEHYDE
(See Hydrocinnamaldehyde)

BENZYL ACETATE
Acetic acid, Benzyl ester

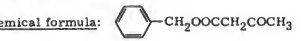
Chemical formula: 

Flavors in which used:
Raspberry, strawberry, butter, violet, apple, banana, cherry, plum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7.8
Ice cream, ices	14
Candy	34
Baked goods	22
Chewing gum	760
Gelatin desserts	23

BENZYLACETIC ACID
(See 3-Phenylpropionic acid)

BENZYL ACETOACETATE
Acetoacetic acid, Benzyl ester

Chemical formula: 

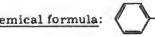
Flavors in which used:
Berry, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.7
Ice cream, ices	6
Candy	13
Baked goods	13
Gelatin desserts	10, 0.50
Chewing gum	50

BENZYLACETONE
(See 4-Phenyl-3-buten-2-one)

BENZYL ACETYL ACETATE
(See Benzyl acetoacetate)

BENZYL ALCOHOL

Chemical formula: 

Flavors in which used:
Blueberry, loganberry, raspberry, orange, floral, rose, violet, fruit, cherry, grape, honey, liquor, muscatel, nut, walnut, root beer, vanilla

Natural food occurrence:
Cassie, raspberries, tea, clove oil, castoreum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	15
Ice cream, ices	160
Candy	47
Baked goods	220
Gelatin desserts	45, 21
Chewing gum	1,200

BENZYL ISOAMYL ALCOHOL
(See α-Isobutylphenethyl alcohol)

BENZYL BENZENE CARBOXYLATE
(See Benzyl benzoate)

BENZYL BENZOATE
Benzoic acid, Benzyl ester

Chemical formula: 

Flavors in which used:
Loganberry, strawberry, cherry, pineapple, liquor, muscatel, rum, cheese, nut

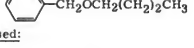
Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.5
Ice cream, ices	12
Candy	39
Baked goods	33
Chewing gum	280

BENZYL BUTANOATE
(See Benzyl butyrate)

BENZYLBUTYL ALCOHOL
(See α-Propylphenethyl alcohol)

BENZYL ISOBUTYL CARBINOL
(See α-Isobutylphenethyl alcohol)

BENZYL BUTYL ETHER

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50, 2
Ice cream, ices	3.5
Candy	8
Baked goods	2, 8
Gelatin and puddings	2

BENZYL ISOBUTYL KETONE
(See 4-Methyl-1-phenyl-2-pentanone)

BENZYL BUTYRATE
Butyric acid, Benzyl ester

Chemical formula: 

Flavors in which used:
Loganberry, raspberry, strawberry, butter, apricot, peach, pear, liquor, muscatel, cheese, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.5
Ice cream, ices	6.9
Candy	7.7
Baked goods	9.9
Gelatin desserts	3
Chewing gum	310

BENZYL ISOBUTYRATE
Isobutyric acid, Benzyl ester

Chemical formula: 

Flavors in which used:
Strawberry, fruit

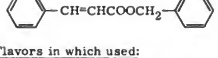
Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.2
Ice cream, ices	12
Candy	12
Baked goods	25

BENZYL CARBINOL
(See Phenethyl alcohol)

BENZYL CARBINYL ACETATE
(See Phenethyl acetate)

BENZYL CINNAMATE
Cinnamic acid, Benzyl ester

Chemical formula:



Flavors in which used:
Raspberry, chocolate, apricot, cherry, peach, pineapple, plum, prune, honey, liquor, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.4
Ice cream, ices	2.5
Candy	6.7
Baked goods	6.6
Gelatin desserts	3, 5
Chewing gum	5.3, 120

BENZYL DIMETHYL CARBINYL ACETATE
(See α,α-Dimethylphenethyl acetate)

BENZYL DIMETHYL CARBINYL BUTYRATE
(See α,α-Dimethylphenethyl butyrate)

BENZYL DIMETHYL CARBINYL FORMATE
(See α,α-Dimethylphenethyl formate)

BENZYL 2,3-DIMETHYLCROTONATE
2,3-Dimethylcrotonic acid, Benzyl ester

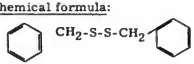
Chemical formula: 

Flavors in which used:
Fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.75
Ice cream, ices	2.8
Candy	1.8
Baked goods	1.5

BENZYL DIPROPYL KETONE
(See 3-Benzyl-4-heptanone)

BENZYL DISULFIDE
Dibenzyl disulfide

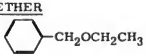
Chemical formula: 

Flavors in which used:
Coffee, caramel

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	1
Beverages	6
Ice cream, ices	0.5
Candy	0.1

BENZYLETHYL ALCOHOL
(See 3-Phenyl-1-propanol)

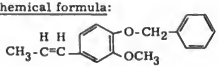
BENZYL ETHYL ETHER

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50, 1
Ice cream, ices	2.5
Candy	7.5
Baked goods	7.5

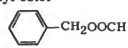
BENZYL ISOEUGENOL
Isoeugenol benzyl ether

Chemical formula: 

Flavors in which used:
Spice, banana

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7.8
Ice cream, ices	0.50
Candy	17
Baked goods	3.5, 1

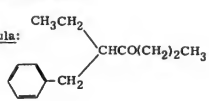
BENZYL FORMATE
Formic acid, Benzyl ester

Chemical formula: 

Flavors in which used:
Chocolate, apricot, cherry, peach, pineapple, plum, prune, honey, liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.4
Ice cream, ices	8
Candy	12
Baked goods	8.6
Chewing gum	32

3-BENZYL-4-HEPTANONE

Chemical formula: 

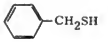
Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.2
Ice cream, ices	4.6
Candy	11
Baked goods	11

BENZYL o-HYDROXYBENZOATE
(See Benzyl salicylate)

BENZYLIDENE ACETONE METHYL
(See 3-Methyl-4-phenyl-3-butene-2-one)

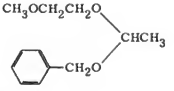
BENZYL MERCAPTAN
α-Toluenethiol

Chemical formula: 

Flavors in which used:
Coffee

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.25, 0.15
Ice cream, ices	0.15, 0.50
Candy	0.75, 0.50
Baked goods	0.75, 0.50

BENZYL METHOXYETHYL ACETAL
Acetaldehyde benzyl β-methoxyethyl acetal
1-Benzyloxy-1-(β-methoxy) ethoxy ethane

Chemical formula: 

Flavors in which used:
Fruit, cherry

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50
Ice cream, ices	1
Candy	1
Baked goods	1

BENZYL 2-METHYL PROPANOATE
(See Benzyl isobutyrate)

BENZYL METHYL TIGLATE
(See Benzyl 2,3-dimethylcrotonate)

1-BENZYLOXY-1-(β-METHOXY) ETHOXY ETHANE
(See Benzyl methoxyethyl acetal)

BENZYL PHENYLACETATE
Phenylacetic acid, Benzyl ester

Chemical formula: 

Flavors in which used:
Butter, caramel, fruit, honey

Natural food occurrence:
Honey

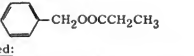
Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	2.6
Candy	6.6
Baked goods	4.3
Toppings	5

BENZYL β-PHENYLACRYLATE
(See Benzyl cinnamate)

BENZYL PHENYLFORMATE
(See Benzyl benzoate)

BENZYL PROPANOATE
(See Benzyl propionate)

BENZYL PROPIONATE
Propionic acid, Benzyl ester

Chemical formula: 

Flavors in which used:
Berry, apple, banana, grape, pear, pineapple

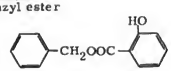
Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.1
Ice cream, ices	5.8
Candy	19
Baked goods	17
Chewing gum	150, 19
Icings	40

BENZYLPROPYL ACETATE
(See α,α-Dimethylphenethyl acetate)

BENZYLPROPYL ALCOHOL
(See α,α-Dimethylphenethyl alcohol)

BENZYLPROPYL CARBINOL
(See α-Propylphenethyl alcohol)

BENZYL SALICYLATE
Salicylic acid, Benzyl ester

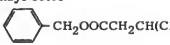
Chemical formula: 

Flavors in which used:
Floral, peach

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.4
Ice cream, ices	0.89
Candy	1.8
Baked goods	0.01, 2.2

BENZYLTHIOL
(See Benzyl mercaptan)

BENZYL ISOVALERATE
Isovaleric acid, Benzyl ester

Chemical formula: 

Flavors in which used:
Raspberry, apple, apricot, banana, cherry, pineapple, walnut, cheese

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.2
Ice cream, ices	3.4
Candy	16
Baked goods	9.4
Gelatin	56
Chewing gum	200

BERGAMOL
(See Linalyl acetate)

BIACETYL
(See Diacetyl)

BLATTERALKOHOL
(See 3-Hexen-1-ol)

BOLETIC ACID
(See Fumaric acid)

BORNEOCAMPHOR
(See Borneol)

BORNEOL

Chemical formula: 

Flavors in which used:
Nut, spice

Natural food occurrence:
Coriander, ginger, oil of lime, rosemary, strawberries, thyme, citronella, nutmeg

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.4, 0.25
Ice cream, ices	1.4
Candy	3.7
Baked goods	5.1
Sirup	0.30
Chewing gum	0.30

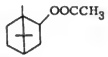
ISOBORNEOL

Chemical formula: 

Flavors in which used:
Fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6.2
Ice cream, ices	23
Candy	11
Baked goods	8.3
Chewing gum	0.80

BORNYL ACETATE
Acetic acid, Bornyl ester

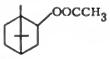
Chemical formula: 

Flavors in which used:
Fruit, spice

Natural food occurrence:
Extracts of yarrow herb and iva herb

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.1
Ice cream, ices	1.8
Candy	1.9
Baked goods	1.4
Sirups	0.20
Gelatin and puddings	70
Chewing gum	0.30

ISOBORNYL ACETATE
Acetic acid, Isobornyl ester

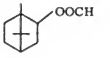
Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	9.6
Ice cream, ices	12
Candy	3.9
Baked goods	9.5
Gelatin	70

BORNYL ALCOHOL
(See Borneol)

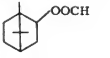
BORNYL FORMATE
Formic acid, Bornyl ester

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.7
Ice cream, ices	0.30, 3
Candy	2, 0.80
Baked goods	2, 0.80
Sirups	0.04

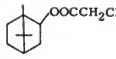
ISOBORNYL FORMATE
Formic acid, Isobornyl ester

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1, 0.06
Ice cream, ices	1, 0.03
Candy	0.74
Baked goods	0.80

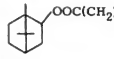
ISOBORNYL PROPIONATE
Propionic acid, Isobornyl ester

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1, 0.01
Ice cream, ices	1, 0.80
Candy	1.2
Baked goods	1.8

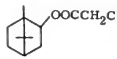
BORNYL VALERATE
Valeric acid, Bornyl ester

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1, 0.06
Ice cream, ices	0.30
Candy	2, 0.90
Baked goods	0.80

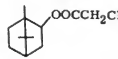
BORNYL ISOVALERATE
Isovaleric acid, Bornyl ester

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1, 0.06
Ice cream, ices	1, 0.40
Candy	2, 0.90
Baked goods	2, 0.90
Sirups	1.2

ISOBORNYL ISOVALERATE
Isovaleric acid, Isobornyl ester

Chemical formula: 

Flavors in which used:
Fruit

ISOBORNYL ISOVALERATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1, 0.60
Ice cream, ices	1, 0.30
Candy	0.90
Baked goods	2, 0.80

BORNYVAL
(See Bornyl isovalerate)

BUTANAL
(See Butyraldehyde)

BUTANDIONE
(See Diacetyl)

1,4-BUTANEDICARBOXYLIC ACID
(See Adipic acid)

2,3-BUTANEDIONE
(See Diacetyl)

BUTANOIC ACID
(See Butyric acid)

1-BUTANOL
(See Butyl alcohol)

ISOBUTANOL
(See Isobutyl alcohol)

2,3-BUTANOLONE
(See Acetoin)

2-BUTANONE

Chemical formula: $CH_3COCH_2CH_3$

Flavors in which used:
None listed

Natural food occurrence:
Coffee

Foods in which used:	Approx. Avg Maximum ppm
Beverages	70
Ice cream, ices	270
Candy	100
Baked goods	100

trans-BUTENEDIOIC ACID
(See Fumaric acid)

BUTTER ACIDS

Flavors in which used:
Butter, cheese

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	3
Candy	2,800
Baked goods	8.3

BUTTER ESTERS

Chemical formula: Mixed $RCOOCH_2CH_3$

Flavors in which used:
Butter, caramel, chocolate

Foods in which used:	Approx. Avg Maximum ppm
Beverages	--
Ice cream, ices	24
Candy	78
Baked goods	86
Topping	2
Popcorn	1,200

BUTYL ACETATE
Acetic acid, Butyl ester

Chemical formula: $CH_3COOCH_2CH_2CH_2CH_3$

Flavors in which used:
Raspberry, strawberry, butter, banana, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	11
Ice cream, ices	16
Candy	32
Baked goods	32
Gelatin desserts	13
Chewing gum	220

ISOBUTYL ACETATE
Acetic acid, Isobutyl ester

Chemical formula: $CH_3COOCH_2CH(CH_3)_2$

Flavors in which used:
Raspberry, strawberry, butter, banana, grape

ISOBUTYL ACETATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	11
Ice cream, ices	16
Candy	36
Baked goods	35
Gelatin desserts	170
Chewing gum	860
Icings	5.5

BUTYL ACETOACETATE
Acetoacetic acid, Butyl ester

Chemical formula: $CH_3COCH_2COOCH_2(CH_2)_2CH_3$

Flavors in which used:
Berry, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.2
Ice cream, ices	7.3
Candy	26
Baked goods	26

ISOBUTYL ACETOACETATE
Acetoacetic acid, Isobutyl ester

Chemical formula: $CH_3COCH_2COOCH_2CH(CH_3)_2$

Flavors in which used:
Berry, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.0
Ice cream, ices	7.0
Candy	25
Baked goods	25

BUTYL ALCOHOL
1-Butanol

Chemical formula: $CH_3CH_2CH_2CH_2OH$

Flavors in which used:
Butter, cream, fruit, liquor, rum, whisky

Natural food occurrence:
Apples, raspberries

Foods in which used:	Approx. Avg Maximum ppm
Beverages	12
Ice cream, ices	7
Candy	34
Baked goods	32
Cordials	1
Cream	4

ISOBUTYL ALCOHOL

Chemical formula: $(CH_3)_2CHCH_2OH$

Flavors in which used:
Butter, cola, fruit, liquor, rum, whisky

Natural food occurrence:
Apples, raspberries

Foods in which used:	Approx. Avg Maximum ppm
Beverages	17
Ice cream, ices	7
Candy	30
Baked goods	24

BUTYL ALDEHYDE
(See Butyraldehyde)

ISOBUTYL ALDEHYDE
(See Isobutyraldehyde)

ISOBUTYL ANGELATE
Angelic acid, Isobutyl ester

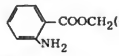
Chemical formula: $CH_3CH{=}C(CH_3)COOCH_2CH(CH_3)_2$

Flavors in which used:
None listed

Natural food occurrence:
Oil of chamomile

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.5
Ice cream, ices	1.5
Candy	5,
Icings	3, 100

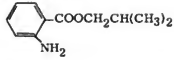
BUTYL ANTHRANILATE
Anthranilic acid, Butyl ester

Chemical formula: 

Flavors in which used:
Grape, mandarin, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	2.6
Candy	9
Baked goods	6.7

ISOBUTYL ANTHRANILATE
Anthranilic acid, Isobutyl ester

Chemical formula: 

Flavors in which used:
Mandarin, cherry, grape

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	4
Candy	12
Baked goods	12
Chewing gum	5, 1,700

ISOBUTYL BENZOATE
Benzoic acid, Isobutyl ester

Chemical formula: 

Flavors in which used:
Berry, fruit, cherry, plum, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2, 9
Ice cream, ices	7.9
Candy	12
Baked goods	10, 23

BUTYL BUTYRATE
Butyric acid, Butyl ester

Chemical formula: $CH_3(CH_2)_2COOCH_2(CH_2)_2CH_3$

Flavors in which used:
Berry, butter, apple, banana, peach, pineapple, liquor, scotch, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	8.6
Ice cream, ices	22
Candy	24
Baked goods	22
Gelatin desserts	14
Chewing gum	1,500 150

ISOBUTYL BUTYRATE
Butyric acid, Isobutyl ester

Chemical formula: $CH_3(CH_2)_2COOCH_2CH(CH_3)_2$

Flavors in which used:
Berry, apple, banana, pineapple, liquor, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	8.3
Ice cream, ices	16
Candy	25
Baked goods	24
Puddings and gelatin	14
Liquor	2

BUTYL ISOBUTYRATE
Isobutyric acid, Butyl ester

Chemical formula: $CH_3(CH_2)_2COOCH_2CH(CH_3)_2$

Flavors in which used:
Raspberry, strawberry, butter, banana, cherry

Foods in which used:	Approx. Avg Maximum ppm
Beverages	8.7
Ice cream, ices	4
Candy	19
Baked goods	39
Chewing gum	2,000

ISOBUTYL ISOBUTYRATE
Isobutyric acid, Isobutyl ester

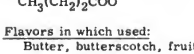
Chemical formula: $(CH_3)_2CHCOOCH_2CH(CH_3)_2$

Flavors in which used:
Strawberry, butter, fruit, banana, liquor, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7.5
Ice cream, ices	7.4
Candy	16
Baked goods	17
Gelatin and puddings	3.3, 10
Liquor	2

BUTYL BUTYRYLLACTATE
Butyryllactic acid, Butyl ester

Chemical formula:



Flavors in which used:
Butter, butterscotch, fruit, nut, vanilla

BUTYL BUTYRYLLACTATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	13
Ice cream, ices	9
Candy	44
Baked goods	58

ISOBUTYL CARBINOL
(See Isoamyl alcohol)

α-BUTYLCINNAMALDEHYDE

Chemical formula: $CH_3(CH_2)_2CH_2$ | $-C_6H_4-CH{=}CCHO$

Flavors in which used:
Fruit, nut, spice, cinnamon

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50, 1
Ice cream, ices	1, 2.8
Candy	2, 8
Baked goods	2, 8

BUTYL CINNAMATE
Cinnamic acid, Butyl ester

Chemical formula: $-C_6H_4-CH{=}CHCOOCH_2(CH_2)_2CH_3$

Flavors in which used:
Chocolate, cocoa, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.83
Ice cream, ices	2.6
Candy	15, 1
Baked goods	15, 1
Liquors	2

ISOBUTYL CINNAMATE
Cinnamic acid, Isobutyl ester

Chemical formula: $-C_6H_4-CH{=}CHCOOCH_2CH(CH_3)_2$

Flavors in which used:
Currant, raspberry, strawberry, chocolate, cocoa, cherry, peach, plum, liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	3.4
Candy	5.4
Baked goods	5.4
Liquor	2.0

BUTYL 2-DECENOATE
2-Decenoic acid, Butyl ester

Chemical formula: $CH_3(CH_2)_6CH{=}CHCOOCH_2(CH_2)_2CH_3$

Flavors in which used:
Apricot, peach

Foods in which used:	Approx. Avg Maximum ppm
Beverages	8
Ice cream, ices	--
Candy	22, 1.5
Baked goods	30
Chewing gum	2,000

BUTYL DECYLENATE
(See Butyl 2-decenoate)

BUTYL DODECANOATE
(See Butyl laurate)

BUTYL ETHYL MALONATE

Chemical formula: $CH_3CH_2OOCCH_2COOCH_2(CH_2)_2CH_3$

Flavors in which used:
Fruit, apple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3
Ice cream, ices	--
Candy	0.13
Baked goods	--

BUTYL FORMATE
Formic acid, Butyl ester

Chemical formula: $HCOOCH_2(CH_2)_2CH_3$

Flavors in which used:
Fruit, plum, liquor, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.9
Ice cream, ices	3.2
Candy	11
Baked goods	9.1
Gelatin desserts	5

ISOBUTYL FORMATE
Formic acid, Isobutyl ester

Chemical formula: $HCOOCH_2CH(CH_3)_2$

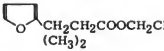
ISOBUTYL FORMATE (cont'd)

Flavors in which used:
Strawberry, fruit, liquor, rum, whisky

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.2
Ice cream, ices	7.1
Candy	19
Baked goods	8.2
Gelatin desserts	5

ISOBUTYL FORMIC ACID
(See Isovaleric acid)

ISOBUTYL 2-FURANPROPIONATE
2-Furanpropionic acid, Isobutyl ester

Chemical formula: 

Flavors in which used:
Berry, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	30, 8.1
Ice cream, ices	44, 14
Candy	33, 17
Baked goods	33, 21
Gelatin desserts	30, 4
Chewing gum	12
Icings	20

ISOBUTYL FURYLPROPIONATE
(See Isobutyl 2-furanpropionate)

BUTYL HEPTANOATE
Heptanoic acid, Butyl ester

Chemical formula: $CH_3(CH_2)_5COOCH_2(CH_2)_2CH_3$

Flavors in which used:
Fruit, liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1, 0.50
Ice cream, ices	10, 2
Candy	25, 2
Baked goods	25, 2

ISOBUTYL HEPTANOATE
Heptanoic acid, Isobutyl ester

Chemical formula: $CH_3(CH_2)_5COOCH_2CH(CH_3)_2$

Flavors in which used:
Fruit, liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.5, 0.50
Ice cream, ices	10, 2.4
Candy	25, 7
Baked goods	25, 7

BUTYL HEXANOATE
Hexanoic acid, Butyl ester

Chemical formula: $CH_3(CH_2)_4COOCH_2(CH_2)_2CH_3$

Flavors in which used:
Butter, butterscotch, pineapple, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.7
Ice cream, ices	3.9
Candy	7.6
Baked goods	10

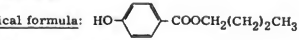
ISOBUTYL HEXANOATE
Hexanoic acid, Isobutyl ester

Chemical formula: $CH_3(CH_2)_4COOCH_2CH(CH_3)_2$

Flavors in which used:
Apple, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.4
Ice cream, ices	3.9
Candy	8.1
Baked goods	8.3
Chewing gum	2

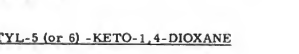
BUTYL p-HYDROXYBENZOATE
Butyl parasept

Chemical formula: 

Flavors in which used:
None listed

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1,000
Baked goods	10

2-BUTYL-5 (or 6) -KETO-1,4-DIOXANE

Chemical formula: 

2-BUTYL-5 (or 6) -KETO-1,4-DIOXANE (cont'd)

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	--
Ice cream, ices	5
Candy	5
Baked goods	5
Shortening	5

BUTYL LACTATE
Lactic acid, Butyl ester

Chemical formula: $CH_3CHOHCOOCH_2(CH_2)_2CH_3$

Flavors in which used:
Butter, butterscotch, caramel, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.66
Ice cream, ices	2.8
Candy	6.5
Baked goods	7.7

BUTYL LAURATE
Dodecanoic acid, Butyl ester

Chemical formula: $CH_3(CH_2)_{10}COOCH_2(CH_2)_2CH_3$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3, 0.40
Ice cream, ices	0.60
Candy	17
Baked goods	40, 1

BUTYL LEVULINATE
Levulinic acid, Butyl ester

Chemical formula: $CH_3COCH_2CH_2COO(CH_2)_3CH_3$

Flavors in which used:
Butter, fruit, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1, 0.20
Ice cream, ices	2.1
Candy	4.6
Baked goods	4.6

ISOBUTYL cis-2-METHYL-2-BUTENOATE
(See Isobutyl angelate)

2-ISOBUTYL-5-METHYL CYCLOHEXANOL
(See (d)-neo-Menthol)

BUTYL OCTADECANOATE
(See Butyl stearate)

BUTYL PARASEPT
(See Butyl p-hydroxybenzoate)

ISOBUTYLPHENETHYL ALCOHOL

Chemical formula: 

Flavors in which used:
Butter, caramel, chocolate, fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	110, 1
Ice cream, ices	38
Candy	55
Baked goods	50, 15
Liqueurs	50
Chocolate	50

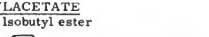
BUTYL PHENYLACETATE
Phenylacetic acid, Butyl ester

Chemical formula: 

Flavors in which used:
Butter, caramel, chocolate, rose, fruit, honey, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1, 0.50
Ice cream, ices	5, 2.1
Candy	15, 4.5
Baked goods	15, 4.6
Gelatin and puddings	5

ISOBUTYL PHENYLACETATE
Phenylacetic acid, Isobutyl ester

Chemical formula: 

Flavors in which used:
Butter, caramel, chocolate, fruit, honey, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.8
Ice cream, ices	2.8
Candy	5.5

ISOBUTYL PHENYLACETATE (cont'd)

Foods in which used (cont'd):	Approx. Avg Maximum ppm
Baked goods	5
Gelatin and puddings	5
Maraschino cherries	3

BUTYL PROPIONATE
Propionic acid, Butyl ester

Chemical formula: $CH_3CH_2COOCH_2(CH_2)_2CH_3$

Flavors in which used:
Butter, rum butter, fruit, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.0
Ice cream, ices	5.2
Candy	25
Baked goods	27

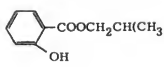
ISOBUTYL PROPIONATE
Propionic acid, Isobutyl ester

Chemical formula: $CH_3CH_2COOCH_2CH(CH_3)_2$

Flavors in which used:
Strawberry, butter, peach, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.4
Ice cream, ices	4.2
Candy	25
Baked goods	35

ISOBUTYL SALICYLATE
Salicylic acid, Isobutyl ester

Chemical formula: 

Flavors in which used:
Fruit, root beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.5
Ice cream, ices	1.8
Candy	2.6
Baked goods	5

BUTYL SEBACATE
(See Dibutyl sebacate)

BUTYL STEARATE
Octadecanoic acid, Butyl ester

Chemical formula: $CH_3(CH_2)_{16}COOCH_2(CH_2)_2CH_3$

Flavors in which used:
Butter, banana, liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	2
Candy	190
Baked goods	340
Chewing gum	330
Liqueurs	5

BUTYL SULFIDE

Chemical formula: $(CH_3(CH_2)_2CH_2)_2S$

Flavors in which used:
Floral, violet, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1, 0.02
Ice cream, ices	1, 0.01
Candy	1, 0.03
Baked goods	1, 0.03

BUTYL 10-UNDECENOATE
10-Undecenoic acid, Butyl ester

Chemical formula: $CH_2{=}CH(CH_2)_8COOCH_2(CH_2)_2CH_3$

Flavors in which used:
Butter, apricot, cognac, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.5, 0.90
Ice cream, ices	5, 2
Candy	20, 6.6
Baked goods	20, 7.8
Chewing gum	60, 0.40
Icing	5
Liquor	5

BUTYL VALERATE
Valeric acid, Butyl ester

Chemical formula: $CH_3(CH_2)_3COOCH_2(CH_2)_2CH_3$

Flavors in which used:
Butter, fruit, chocolate

BUTYL VALERATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3
Ice cream, ices	2.6
Candy	8
Baked goods	6.8

BUTYL ISOVALERATE

Isovaleric acid. Butyl ester

Chemical formula: $(CH_3)_2CHCH_2COOCH_2(CH_2)_2CH_3$

Flavors in which used:
Chocolate, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.6
Ice cream, ices	12
Candy	13
Baked goods	15
Pudding and gelatin	50

BUTYRALDEHYDE

Chemical formula: $CH_3CH_2CH_2CHO$

Flavors in which used:
Butter, caramel, fruit, liquor, brandy, nut

Natural food occurrence:
Coffee, strawberries

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.71
Ice cream, ices	4.8
Candy	2.9
Baked goods	5.4
Alcoholic beverages	0.50
Icings	0.25

ISOBUTYRALDEHYDE

Chemical formula: $(CH_3)_2CHCHO$

Flavors in which used:
Berry, butter, caramel, fruit, liquor, wine

Natural food occurrence:
Soy sauce, tea, tobacco, coffee

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.30
Ice cream, ices	0.50, 0.25
Candy	0.67
Baked goods	1, 0.50
Liquor	5

BUTYRIC ACID

Chemical formula: $CH_3(CH_2)_2COOH$

Flavors in which used:
Butter, butterscotch, caramel, fruit, nut, cheese

Natural food occurrence:
Apples, butter acids, geranium, rose oil, grapes, strawberries, wormseed oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	20, 5.5
Ice cream, ices	26, 6.5
Candy	200, 82
Baked goods	100, 32
Gelatin and puddings	45, 0.19
Chewing gum	270, 60
Margarine	18

ISOBUTYRIC ACID

Chemical formula: $(CH_3)_2CHCOOH$

Flavors in which used:
Butter, butterscotch, fruit, liquor, rum, cheese, nut, vanilla, cream soda

Natural food occurrence:
Bay, bay leaves, parsley family, strawberries

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.1
Ice cream, ices	12
Candy	41
Baked goods	38
Chewing gum	470
Margarine	30

BUTYRIC ACID, 2-METHYL-2-PROPEN-1-YL ESTER
(See 2-Methylallyl butyrate)

BUTYRIC ALDEHYDE
(See Butyraldehyde)

ISOBUTYRIC ALDEHYDE
(See Isobutyraldehyde)

BUTYRIN
(See (tri-) Butyrin)

(tri-) BUTYRIN

Chemical formula: $CH_2OOC(CH_2)_2CH_3$
$CHOOC(CH_2)_2CH_3$
$CH_2OOC(CH_2)_2CH_3$

Flavors in which used:
Butter

Natural food occurrence:
Butter

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.10
Ice cream, ices	0.04
Candy	1,000, 0.33
Baked goods	290
Margarine	50, 2.0
Puddings	0.36

BUTYROIN
(See 5-Hydroxy-4-octanone)

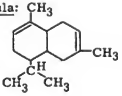
BUTYRONE
(See 4-Heptanone)

BUXINE ®
(See α-Amylcinnamaldehyde)

BUXINOL
(See α-Amylcinnamyl alcohol)

CADINENE

Chemical formula:



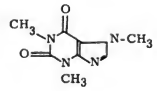
Flavors in which used:
General fixative

Natural food occurrence:
Juniper oil, pepper oil

Foods in which used:	Approx. Avg Maximum ppm
Candy	4,000
Baked goods	1,200
Chewing gum	1,000

CAFFEINE

Chemical formula:



Flavors in which used:
Cola, root beer

Natural food occurrence:
Coffee, cola, guarana, maté, tea, kola nut (extract), guarana gum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	120

CAJEPUTENE
(See d-Limonene)

CAJEPUTOL
(See Eucalyptol)

2-CAMPHANOL
(See Borneol)

CAMPHENE

Chemical formula:

Flavors in which used:
Spice, nutmeg

Natural food occurrence:
Calamus oil, citronella, ginger, lemon oil, mandarin oil, myrtle, petitgrain oil, juniper berries

Foods in which used:	Approx. Avg Maximum ppm
Beverages	90, 40
Ice cream, ices	20
Candy	160
Baked goods	27

d-CAMPHOR

Chemical formula:

Flavors in which used:
Mint

d-CAMPHOR (cont'd)

Natural food occurrence:
Basil, ho oil, iva herb extract, zedoary-bark extract

Foods in which used:	Approx. Avg Maximum ppm
Ice cream, ices	0.10
Candy	25, 1.1
Baked goods	11
Condiments	20

CAPRALDEHYDE
(See Decanal)

CAPRIC ACID
(See Decanoic acid)

CAPRIC ALDEHYDE
(See Decanal)

CAPRINALDEHYDE
(See Decanal)

CAPROALDEHYDE
(See Hexanal)

CAPROIC ACID
(See Hexanoic acid)

CAPROIC ALDEHYDE
(See Hexanal)

CAPRONIC ETHER ABSOLUTE
(See Ethyl hexanoate)

CAPRYL ALCOHOL
(See 1-Octanol)

CAPRYL ALCOHOL (Secondary)
(See 2-Octanol)

CAPRYLALDEHYDE
(See Octanal)

CAPRYLIC ACID
(See Octanoic acid)

CAPRYLIC ALCOHOL
(See 1-Octanol)

CAPRYLIC ALDEHYDE
(See Octanal)

CARAMEL COLOR

Derivation:
Heating and caramelizing of sugar

Flavors in which used:
Strawberry, butter, butterscotch, caramel, chocolate, cocoa, cola, fruit, cherry, grape, birch beer, liquor, rum, brandy, maple, meat, nut, black walnut, walnut, root beer, spice, ginger, ginger ale, vanilla, cream soda

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2,200
Ice cream, ices	590
Candy	180
Baked goods	220
Sirups	2,800
Meats	2,100

CARVACROL

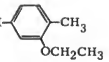
Chemical formula:

Flavors in which used:
Citrus, fruit, mint, spice

Natural food occurrence:
Dittany of Crete oil, oregano, lovage oil, marjoram, origanum oil, savory

Foods in which used:	Approx. Avg Maximum ppm
Beverages	26
Ice cream, ices	34
Candy	92
Baked goods	120
Condiments	37

CARVACRYL ETHYL ETHER
2-Ethoxy-p-cymene

Chemical formula: $(CH_3)_2CH$-  -CH_3

Flavors in which used:
Spices

CARVACRYL ETHYL ETHER (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	13, 2
Ice cream, ices	10
Candy	21
Baked goods	39, 3

CARVEOL

Chemical formula:

Flavors in which used:
Mint, spearmint, spice, caraway

Natural food occurrence:
Caraway, grapefruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	13, 1.5
Ice cream, ices	3
Candy	39, 3
Baked goods	5, 0.03

CARVOL
(See Carvone)

4-CARVOMENTHENOL

Chemical formula:

Flavors in which used:
Citrus, spice

Natural food occurrence:
Cardamom oil, juniper berries

Foods in which used:	Approx. Avg Maximum ppm
Beverages	21, 1
Ice cream, ices	84, 1
Candy	63, 7
Baked goods	7

CARVONE

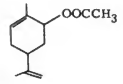
Chemical formula:

Flavors in which used:
Liquor, mint, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	850
Ice cream, ices	120
Candy	180
Baked goods	110
Liquor	130

CARVYL ACETATE
Acetic acid, Carvyl ester

Chemical formula:

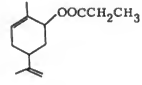


Flavors in which used:
Meat

Foods in which used:	Approx. Avg Maximum ppm
Beverages	11, 1.5
Ice cream, ices	44, 3
Candy	20
Baked goods	20

CARVYL PROPIONATE
Propionic acid, Carvyl ester

Chemical formula:



Flavors in which used:
Mint

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	2
Candy	24, 2
Baked goods	24, 2

β-CARYOPHYLLENE

Chemical formula: Not established

Flavors in which used:
Spice

Natural food occurrence:
Cloves, black currant buds, yarrow herb, grapefruit, allspice, black pepper

β-CARYOPHYLLENE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	14
Ice cream, ices	2
Candy	34
Baked goods	27
Chewing gum	200
Condiments	50

CARYOPHYLLENE ACETATE

Chemical formula: Not established

Flavors in which used:
General fixative

Foods in which used:	Approx. Avg Maximum ppm
Beverages	8.3
Ice cream, ices	5.6
Candy	23
Baked goods	25
Chewing gum	85, 160

CARYOPHYLLENE ALCOHOL

Chemical formula: Not established

Flavors in which used:
Mushroom

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	27
Condiments	50

CETONE D
(See Methyl β-naphthyl ketone)

CETONE V
(See Allyl α-ionone)

α-CETONE
(See Methyl-α-ionone)

β-CETONE
(See Methyl-β-ionone)

CETYL ALCOHOL
(See 1-Hexadecanol)

CETYLIC ACID
(See Palmitic acid)

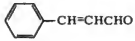
CHAVICYL METHYL ETHER
(See Estragole)

CINENE
(See d-Limonene)

CINEOLE
(See Eucalyptol)

CINNAMAL
(See Cinnamaldehyde)

CINNAMALDEHYDE

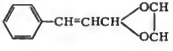
Chemical formula: 

Flavors in which used:
Cola, apple, cherry, liquor, rum, nut, pecan, spice, cinnamon, vanilla, cream soda

Natural food occurrence:
Cassia-bark extract, cassia oil, cinnamon-bark oil, cinnamon-root oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	9
Ice cream, ices	7.7
Candy	700
Baked goods	180
Chewing gum	4,900
Condiments	20
Meats	60

CINNAMALDEHYDE ETHYLENE GLYCOL ACETAL
Cinncloval

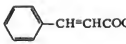
Chemical formula: 

Flavors in which used:
Spice, cassia, cinnamon, clove

Foods in which used:	Approx. Avg Maximum ppm
Beverages	--
Ice cream, ices	--
Candy	0.06, 2
Baked goods	2
Condiments	5

CINNAMEIN
(See Benzyl cinnamate)

CINNAMIC ACID

Chemical formula: 

Flavors in which used:
Cherry, honey, spice, cassia, cinnamon

Natural food occurrence:
Cassia-bark extract, strawberries, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	31
Ice cream, ices	40
Candy	30
Baked goods	36
Chewing gum	10

CINNAMIC ALCOHOL

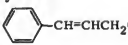
(See Cinnamyl alcohol)

CINNAMIC ALDEHYDE

(See Cinnamaldehyde)

CINNAMYL ACETATE

Acetic acid, Cinnamyl ester

Chemical formula: 

Flavors in which used:
Berry, apple, apricot, cherry, grape, peach, pineapple, cinnamon, vanilla

Natural food occurrence:
Cassia bark

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.7
Ice cream, ices	6.5
Candy	16
Baked goods	11
Condiments	2
Chewing gum	8.7

CINNAMYL ALCOHOL

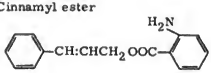
Chemical formula: 

Flavors in which used:
Raspberry, strawberry, apricot, peach, plum, prune, grape, liquor, brandy, nut, black walnut, spice, cinnamon

Foods in which used:	Approx. Avg Maximum ppm
Beverages	8.8
Ice cream, ices	8.7
Candy	17
Baked goods	33
Chewing gum	720
Gelatin desserts	22
Brandy	5

CINNAMYL ANTHRANILATE

Anthranilic acid, Cinnamyl ester

Chemical formula: 

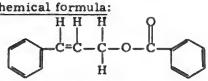
Flavors in which used:
Cherry, grape, honey, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6.8
Ice cream, ices	1.7
Candy	4.3
Baked goods	5.3
Gelatin desserts	28
Chewing gum	730, 46

CINNAMYL BENZOATE

Benzoic acid, Cinnamyl ester

Chemical formula:

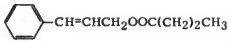


Flavors in which used:
Butter, caramel, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.7
Ice cream, ices	6.5
Candy	16
Baked goods	11
Condiments	2
Chewing gum	8.7

CINNAMYL BUTYRATE

Butyric acid, Cinnamyl ester

Chemical formula: 

Flavors in which used:
Citrus, orange, fruit

CINNAMYL BUTYRATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.6
Ice cream, ices	8.5
Candy	7.6
Baked goods	11
Gelatin desserts	1.2

CINNAMYL ISOBUTYRATE

Isobutyric acid, Cinnamyl ester

Chemical formula: 

Flavors in which used:

Strawberry, citrus, apple, banana, grape, peach, pear, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.5
Ice cream, ices	5
Candy	7.7
Baked goods	8.5
Gelatin desserts	1.2, 0.02
Chewing gum	140
Toppings	1

CINNAMYL CINNAMATE

Cinnamic acid, Cinnamyl ester

Chemical formula:

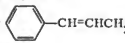
Flavors in which used:

Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.81
Ice cream, ices	1.5
Candy	10
Baked goods	7

CINNAMYL FORMATE

Formic acid, Cinnamyl ester

Chemical formula: 

Flavors in which used:

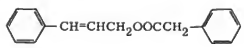
Banana, cherry, pear, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	9.1
Candy	6.9
Baked goods	8
Chewing gum	0.60

CINNAMYL PHENYLACETATE

Phenylacetic acid, Cinnamyl ester

Chemical formula:



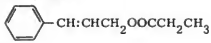
Flavors in which used:

Chocolate, honey, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.7
Ice cream, ices	2, 0.25
Candy	7.3
Baked goods	7.3

CINNAMYL PROPIONATE

Propionic acid, Cinnamyl ester

Chemical formula: 

Flavors in which used:

Berry, chocolate, apple, currant, grape, peach, pear, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	4.3
Candy	7.5
Baked goods	8.8
Gelatin desserts	4 2.4
Chewing gum	53 20

CINNAMYL ISOVALERATE

Isovaleric acid, Cinnamyl ester

Chemical formula:

Flavors in which used:

Strawberry, chocolate, apple, apricot, cherry, grape, maple, nut, spice, peach, pineapple, plum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.2
Ice cream, ices	2.6
Candy	4.1
Baked goods	3.6
Gelatin desserts	11
Chewing gum	19

CINNCLOVAL
(See Cinnamaldehyde ethylene glycol acetal)

CITRAL

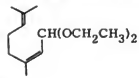
Chemical formula: 

Flavors in which used:
Strawberry, lemon, lime, orange, apple, cherry, grape, spice, ginger, vanilla

Natural food occurrence:
Grapefruit, orange, peach, ginger, grapefruit oil, oil of lemon, oil of lime, petitgrain lemon oil, pimento oil, peels of macrocarpa bunge

Foods in which used:	Approx. Avg Maximum ppm
Beverages	9.2
Ice cream, ices	23
Candy	41
Baked goods	43
Chewing gum	170

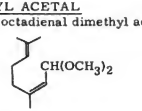
CITRAL DIETHYL ACETAL
3,7-Dimethyl-2,6-octadienal diethyl acetal

Chemical formula: 

Flavors in which used:
Citrus

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.03
Ice cream, ices	--
Candy	0.13
Condiments	110

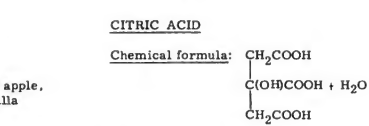
CITRAL DIMETHYL ACETAL
3,7-Dimethyl-2,6-octadienal dimethyl acetal

Chemical formula: 

Flavors in which used:
Citrus, lemon, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6.3
Ice cream, ices	11
Candy	60
Baked goods	60
Chewing gum	15

CITRIC ACID

Chemical formula: 

Flavors in which used:
Citrus, fruit

Natural food occurrence:
Coffee, peaches, pomegranate bark, citrus fruits

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2,500
Ice cream, ices	1,600
Candy	4,300
Baked goods	1,200
Chewing gum	3,600

CITRIDIC ACID
(See Aconitic acid)

CITROFLEX A-4
(See Tributyl acetylcitrate)

CITRONELLAL

Chemical formula: 

Flavors in which used:
Citrus, lemon, fruit, cherry, spice, ginger ale

Natural food occurrence:
Citronella oil, lemon oil, lemongrass oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4
Ice cream, ices	1.3
Candy	4.5
Baked goods	4.7
Gelatin	0.60
Chewing gum	0.30

dl-CITRONELLOL*

*Commercial Citronellol is largely dl-

Chemical formula: Major ingredient is Rhodinol

Flavors in which used:
Berry, citrus, cola, fruit, rose, floral

Natural food occurrence:
Tea

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.1
Ice cream, ices	4.1
Candy	16
Baked goods	18
Gelatin desserts	5.8
Chewing gum	52, 29

CITRONELLOXYACETALDEHYDE

Chemical formula: $(C_{10}H_{19})OCH_2CHO$
(See Rhodinol)

Flavors in which used:
Floral, rose, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.01, 1
Ice cream, ices	1.4
Candy	4.1
Baked goods	4.3

CITRONELLYL ACETATE
Acetic acid, Citronellyl ester
2,6-Dimethylocten-(1 or 2)-ol-8-acetate

Major ingredient: Rhodinyl Acetate (q.v.)

Flavors in which used:
Lemon, rose, apricot, banana, grape, pear, raisin

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.4
Ice cream, ices	4.2
Candy	7.5
Baked goods	9.7
Gelatin desserts	3.7, 0.71
Chewing gum	600, 6.9

CITRONELLYL BUTYRATE
Butyric acid, Citronellyl ester

Major ingredient: Rhodinyl Butyrate

Flavors in which used:
Cola, floral, rose, apple, pineapple, plum, prune, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.8
Ice cream, ices	11
Candy	13
Baked goods	11
Gelatin desserts	4.2, 3.1
Chewing gum	2.3

CITRONELLYL ISOBUTYRATE
Isobutyric acid, Citronellyl ester

Major ingredient: Rhodinyl Isobutyrate

Flavors in which used:
Raspberry, strawberry, floral, rose, grape

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.3
Ice cream, ices	1.7
Candy	8.2
Baked goods	12
Gelatin desserts	3.1

CITRONELLYL FORMATE
Formic acid, Citronellyl ester

Major ingredient: Rhodinyl Formate

Flavors in which used:
Orange, apple, apricot, peach, plum, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	14
Ice cream, ices	13
Candy	19
Baked goods	32
Chewing gum	100, 63

CITRONELLYL PHENYLACETATE
Phenylacetic acid, Citronellyl ester

Major ingredient: Rhodinyl Phenylacetate

Flavors in which used:
Butter, caramel, rose, fruit, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	0.95
Candy	2.4
Baked goods	17

CITRONELLYL PROPIONATE
Propionic acid, Citronellyl ester

Major ingredient: Rhodinyl Propionate

Flavors in which used:
Lemon, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.1
Ice cream, ices	9
Candy	18
Baked goods	19
Chewing gum	0.80

CITRONELLYL VALERATE
Valeric acid, Citronellyl ester

Chemical formula: $(C_{10}H_{19})OOC(CH_2)_3CH_3$

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	2.5
Candy	3
Baked goods	7.7

COCONUT ALDEHYDE
(See γ-Nonalactone)

COFFEINE
(See Caffeine)

CORPS PRALINE
(See Maltol)

CREOSOL
(See 2-Methoxy-4-methyl phenol)

p-CRESOL

Chemical formula:

Flavors in which used:
Nut, vanilla

Natural food occurrence:
Tea

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.67
Ice cream, ices	1, 0.01
Candy	2, 0.01
Baked goods	2, 0.01

4-CRESOL
(See p-Cresol)

o-CRESYL ACETATE
(See o-Tolyl acetate)

p-CRESYL ACETATE
(See p-Tolyl acetate)

p-CRESYL ISOBUTYRATE
(See p-Tolyl isobutyrate)

p-CRESYL DODECANOATE
(See p-Tolyl laurate)

o-CRESYLIC ACETATE
(See o-Tolyl acetate)

p-CRESYLIC ACETATE
(See p-Tolyl acetate)

p-CRESYL LAURATE
(See p-Tolyl laurate)

o-CRESYL METHYL ETHER
(See o-Methylanisole)

p-CRESYL METHYL ETHER
(See p-Methylanisole)

p-CRESYL PHENYLACETATE
(See p-Tolylphenylacetate)

CUMALDEHYDE
(See Cuminaldehyde)

CUMINAL
(See Cuminaldehyde)

CUMIN ALCOHOL
(See p-Isopropylbenzyl alcohol)

CUMINALDEHYDE

Chemical formula: $(CH_3)_2CH$–  –CHO

Flavors in which used:
Berry, fruit, spice

CUMINALDEHYDE (cont'd)

Natural food occurrence:
Cumin, cassia

Foods in which used:	Approx. Avg Maximum ppm
Beverages	12, 3.1
Ice cream, ices	12, 3.2
Candy	15, 4
Baked goods	15, 4
Chewing gum	0.50, 0.40
Condiments	3

CUMINIC ALCOHOL
(See p-Isopropylbenzyl alcohol)

CUMINIC ALDEHYDE
(See Cuminaldehyde)

CUMINOL
(See p-Isopropylbenzyl alcohol)

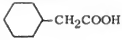
CUMINYL ACETALDEHYDE
(See 3-(p-Isopropyl) phenyl propionaldehyde)

CUMINYL ALCOHOL
(See p-Isopropylbenzyl alcohol)

CYCLAMAL
(See 2-Methyl-3-(p-isopropylphenyl) propionaldehyde)

CYCLAMEN ALDEHYDE
(See 2-Methyl-3-(p-isopropylphenyl) propionaldehyde)

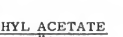
CYCLOHEXANEACETIC ACID

Chemical formula: 

Flavors in which used:
Butter, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	2
Candy	2
Baked goods	2

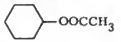
CYCLOHEXANEETHYL ACETATE
Acetic acid, cyclohexaneethyl ester
Cyclohexylethyl acetate

Chemical formula: 

Flavors in which used:
Fruit, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	3
Candy	6
Baked goods	20

CYCLOHEXYL ACETATE
Acetic acid, Cyclohexyl ester

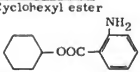
Chemical formula: 

Flavors in which used:
Blackberry, raspberry, apple, banana

Foods in which used:	Approx. Avg Maximum ppm
Beverages	20
Ice cream, ices	15
Candy	100
Baked goods	110

CYCLOHEXYLACETIC ACID
(See Cyclohexaneacetic acid)

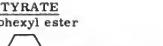
CYCLOHEXYL ANTHRANILATE
Anthranilic acid, Cyclohexyl ester

Chemical formula: 

Flavors in which used:
Apple, banana, grape

Foods in which used:	Approx. Avg Maximum ppm
Beverages	10
Ice cream, ices	3.7
Candy	3.7
Baked goods	10, 2
Gelatin desserts	1

CYCLOHEXYL BUTYRATE
Butyric acid, Cyclohexyl ester

Chemical formula: 

Flavors in which used:
Strawberry, apple, apricot, banana, peach

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.9
Ice cream, ices	5.7
Candy	9.2

CYCLOHEXYL BUTYRATE (cont'd)

Foods in which used (cont'd):	Approx Avg Maximum ppm
Baked goods	28
Gelatin desserts	0.54

CYCLOHEXYL CINNAMATE
Cinnamic acid, Cyclohexyl ester

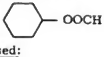
Chemical formula: 

Flavors in which used:
Apple, apricot, peach, prune

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	5
Candy	10, 4
Baked goods	20, 4

CYCLOHEXYLETHYL ACETATE
(See Cyclohexaneethyl acetate)

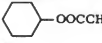
CYCLOHEXYL FORMATE
Formic acid, Cyclohexyl ester

Chemical formula: 

Flavors in which used:
Cherry

Foods in which used:	Approx. Avg Maximum ppm
Beverages	11
Ice cream, ices	2.8
Candy	8
Baked goods	7, 10

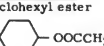
CYCLOHEXYL PROPIONATE
Propionic acid, Cyclohexyl ester

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.4
Ice cream, ices	2.7
Candy	3, 2
Baked goods	3
Gelatin desserts	5

CYCLOHEXYL ISOVALERATE
Isovaleric acid, Cyclohexyl ester

Chemical formula: 

Flavors in which used:
Strawberry, apple

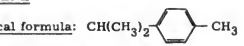
Foods in which used:	Approx. Avg Maximum ppm
Beverages	13
Ice cream, ices	25, 7
Candy	9.3
Baked goods	60, 1.7

CYCLOPENTADECANOLIDE
(See ω-Pentadecalactone)

CYCLOTENE
(See Methylcyclopentenolone)

CYMENE
(See p-Cymene)

p-CYMENE

Chemical formula: 

Flavors in which used:
Citrus, spice

Natural food occurrence:
Anise star, coriander, cumin, mace oil, oil of mandarin, origanum oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.3
Ice cream, ices	5.3
Candy	10
Baked goods	7
Chewing gum	250
Condiments	10, 130

p-CYMEN-7-CARBOXALDEHYDE
(See p-Isopropylphenylacetaldehyde)

p-CYMEN-7-OL
(See p-Isopropylbenzyl alcohol)

2-p-CYMENOL
(See Carvacrol)

3-p-CYMENOL
(See Thymol)

CYMOL
(See p-Cymene)

CYMOPHENOL
(See Carvacrol)

γ-DECALACTONE
4-Hydroxydecanoic acid, γ-Lactone

Chemical formula: $CH_3(CH_2)_5$ 

Flavors in which used:
Citrus, orange, coconut, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	4.5
Candy	5.7
Baked goods	7.1
Gelatin desserts	0.08, 8

δ-DECALACTONE

Chemical formula: $CH_3(CH_2)_4CHCH_2CH_2CH_2$ (O—CO)

Flavors in which used:
Coconut, fruit

Natural food occurrence:
Butter, cream, milk

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5, 5
Ice cream, ices	10
Candy	5, 0.25
Baked goods	8, 0.25
Toppings	5

DECANAL

Chemical formula: $CH_3(CH_2)_8CHO$

Flavors in which used:
Berry, citrus, lemon, orange, fruit, honey

Natural food occurrence:
Oranges, sweet orange peel, sweet-mandarin oil, grapefruit oil, orris, coriander

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.3
Ice cream, ices	4.1
Candy	5.7
Baked goods	6.6
Gelatin desserts	3
Chewing gum	0.60

DECANAL DIMETHYL ACETAL
1,1-Dimethoxydecane

Chemical formula: $CH_3(CH_2)_8CH(OCH_3)_2$

Flavors in which used:
Citrus, liquor, brandy, cognac

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1, 2
Ice cream, ices	2
Candy	8
Baked goods	8
Gelatins and puddings	3
Alcoholic beverages	8

DECANOIC ACID

Chemical formula: $CH_3(CH_2)_8COOH$

Flavors in which used:
Butter, coconut, fruit, liquor, whisky, cheese

Natural food occurrence:
Anise, butter acids, oil of lemon, oil of lime

Foods in which used:	Approx. Avg Maximum ppm
Beverages	9.9
Ice cream, ices	3.1
Candy	4.5
Baked goods	7.8
Gelatins and puddings	0.10, 3
Shortening	5

1-DECANOL

Chemical formula: $CH_3(CH_2)_8CH_2OH$

Flavors in which used:
Butter, lemon, orange, coconut, fruit

Natural food occurrence:
Sweet orange, ambrette seed

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.1
Ice cream, ices	4.6
Candy	5.2
Baked goods	5.2
Chewing gum	3

DECANYL ACETATE
(See Decyl acetate)

2-DECENAL

Chemical formula: $CH_3(CH_2)_6CH{=}CHCHO$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.4
Ice cream, ices	6
Candy	9
Baked goods	9

DECENALDEHYDE
(See 2-Decenal)

DECYL ACETATE
Acetic acid, Decyl ester
Decanol acetate

Chemical formula: $CH_3(CH_2)_8CH_2OOCCH_3$

Flavors in which used:
Berry, orange, apple, peach, plum, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.4
Ice cream, ices	2.7
Candy	6.1
Baked goods	10
Gelatin desserts	1.2
Chewing gum	12

DECYL ALCOHOL
(See 1-Decanol)

ISODECYLALDEHYDE
(See 2,6-Dimethyl octanal)

DECYL BUTYRATE
Butyric acid, Decyl ester

Chemical formula: $CH_3(CH_2)_2COOCH_2(CH_2)_8CH_3$

Flavors in which used:
Citrus, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.18
Ice cream, ices	1.4
Candy	5.9
Baked goods	7.5

DECYLIC ACID
(See Decanoic acid)

DECYLIC ALCOHOL
(See 1-Decanol)

DECYL PROPIONATE
Propionic acid, Decyl ester

Chemical formula: $CH_3(CH_2)_8CH_2OOCCH_2CH_3$

Flavors in which used:
Citrus, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.81
Ice cream, ices	1.4
Candy	5.9
Baked goods	7.5

DELPHINIC ACID
(See Isovaleric acid)

DIACETYL

Chemical formula: $CH_3COCOCH_3$

Flavors in which used:
Blueberry, raspberry, strawberry, butter, buttermilk, butterscotch, caramel, chocolate, coffee, fruit, cheese, cherry, liquor, rum, wine, nut, almond, spice, ginger ale, vanilla, cream soda

Natural food occurrence:
Cheese, cocoa, coffee, pears, raspberries, strawberries, angelica root oil, coffee extract, cooked chicken

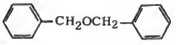
Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.5
Ice cream, ices	5.9
Candy	21
Baked goods	44
Gelatin desserts	19
Chewing gum	35
Shortening	11

DIALLYL DISULFIDE
(See Allyl disulfide)

DIALLYL SULFIDE
(See Allyl sulfide)

DIASMOL
(See 1,3-Nonanediol acetate (mixed esters))

DIBENZYL ETHER

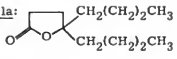
Chemical formula: 

Flavors in which used:
Fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	8.3
Ice cream, ices	5.6
Candy	23
Baked goods	25
Chewing gum	85, 160

DIBENZYL KETONE
(See 1,3-Diphenyl-2-propanone)

4,4-DIBUTYL-γ-BUTYROLACTONE
4,4-Dibutyl-4-hydroxybutyric acid, γ-Lactone

Chemical formula: 

Flavors in which used:
Butter, coconut, nut

Foods in which used:	Approx. Avg Maximum ppm
Ice cream, ices	2.8, 3.5
Candy	4.4, 15
Baked goods	15

4,4-DIBUTYL-4-HYDROXYBUTYRIC ACID, γ-LACTONE
(See 4,4-Dibutyl-γ-butyrolactone)

DIBUTYL SEBACATE
Sebacic acid, Dibutyl ester

Chemical formula: $CH_3(CH_2)_2CH_2OOC(CH_2)_8COOCH_2(CH_2)_2CH_3$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5, 1
Ice cream, ices	5, 2
Candy	15
Baked goods	15

DIBUTYL SULFIDE
(See Butyl sulfide)

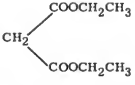
DIETHYL MALATE
Malic acid, Diethyl ester

Chemical formula: $CH_3CH_2OOCCH(OH)CH_2COOCH_2CH_3$

Flavors in which used:
Apple, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.5
Ice cream, ices	6.5
Candy	18
Baked goods	44
Gelatins and puddings	1.5

DIETHYL MALONATE
Ethyl malonate, Malonic ester

Chemical formula: 

Flavors in which used:
Berry, fruit, apple, grape, peach, pear

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.6
Ice cream, ices	17
Candy	20
Baked goods	19
Gelatins and puddings	20

DIETHYL SEBACATE
Sebacic acid, Diethyl ester

Chemical formula: $CH_3CH_2OOC(CH_2)_8COOCH_2CH_3$

Flavors in which used:
Butter, coconut, apple, melon, peach, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.1
Ice cream, ices	9.1
Candy	21
Baked goods	41
Gelatin desserts	19, 3.2
Chewing gum	450, 2.7

DIETHYL SUCCINATE
Succinic acid, Diethyl ester

Chemical formula: $CH_3CH_2OCOCH_2CH_2COOCH_2CH_3$

Flavors in which used:
Raspberry, butter, orange, grape

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7.3
Ice cream, ices	11
Candy	38
Baked goods	45

DIETHYL TARTRATE
Tartaric acid, Diethyl ester

Chemical formula: $CH_3CH_2OOCCHOHCHOHCOOCH_2CH_3$

Foods in which used:	Approx. Avg Maximum ppm
Beverages	50
Ice cream, ices	200
Candy	200
Baked goods	200

DIHYDROANETHOLE
(See p-Propyl anisole)

DIHYDROCARVEOL

Chemical formula:

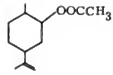
Flavors in which used:
Liquor, mint, spice, caraway

Natural food occurrence:
Pepper (black)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	84
Ice cream, ices	300
Candy	250, 10
Baked goods	250, 10
Alcoholic beverages	500

DIHYDROCARVYL ACETATE
Acetic acid, Dihydrocarvyl ester
p-Meth-8-(9)-en-2-ol-acetate
Methyl-4-isopropenyl-cyclohexan-2-ol-acetate

Chemical formula:



Flavors in which used:
Berry, fruit, mint, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5, 2
Ice cream, ices	20
Candy	22
Baked goods	22
Condiments	10

DIHYDROCOUMARIN
Hydrocoumarin
1,2-Benzodihydropyrone

Chemical formula:

Flavors in which used:
Butter, caramel, coconut, floral, fruit, cherry, liquor, rum, nut, root beer, spice, cinnamon, vanilla, cream soda, tonka

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7.8
Ice cream, ices	21
Candy	44
Baked goods	28
Gelatins and puddings	10
Chewing gum	78

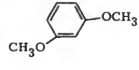
2,3-DIKETOBUTANE
(See Diacetyl)

1,2-DIMETHOXY-4-ALLYLBENZENE
(See Eugenyl methyl ether)

1,1-DIMETHOXY-2-AMYL-3-PHENYL-2-PROPENE
(See α-Amylcinnamaldehyde dimethyl acetal)

m-DIMETHOXYBENZENE
Resorcinol dimethyl ether
1,3-Dimethoxybenzene
Dimethyl resorcinol

Chemical formula:



m-DIMETHOXYBENZENE (cont'd)

Flavors in which used:
Fruit, nut, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3
Ice cream, ices	5
Candy	5
Baked goods	8

p-DIMETHOXYBENZENE

Chemical formula: 

Flavors in which used:
Raspberry, fruit, nut, hazelnut, root beer, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	8.1
Ice cream, ices	5
Candy	4.7
Baked goods	5.8

1,3-DIMETHOXYBENZENE
(See m-Dimethoxybenzene)

3,4-DIMETHOXYBENZENECARBONAL
(See Veratraldehyde)

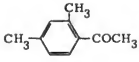
1,1-DIMETHOXYDECANE
(See Decanal dimethyl acetal)

1,1-DIMETHOXYOCTANE
(See Octanal dimethyl acetal)

C-8 DIMETHYLACETAL
(See Octanal dimethyl acetal)

2,4-DIMETHYLACETOPHENONE

Chemical formula:



Flavors in which used:
Grape, vanilla, cream soda

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.78
Ice cream, ices	0.77
Candy	3.9
Baked goods	2.7
Liqueur	1

DIMETHYL ANTHRANILATE
(See Methyl N-methylanthranilate)

α,α-DIMETHYLBENZYL ISOBUTYRATE
Isobutyric acid, α,α-Dimethylbenzyl ester

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5
Ice cream, ices	40
Candy	30
Baked goods	20

DIMETHYL BENZYL CARBINOL
(See α,α-Dimethylphenethyl alcohol)

DIMETHYLCARBINOL
(See Isopropyl alcohol)

DIMETHYL ETHER PROTOCATECHUALDEHYDE
(See Veratraldehyde)

DIMETHYLGLYOXAL
(See Diacetyl)

2,6-DIMETHYL-5-HEPTENAL

Chemical formula: $(CH_3)_2C{=}CH(CH_2)_2CH(CH_3)CHO$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.8
Ice cream, ices	1.7
Candy	8.4
Baked goods	19
Gelatin desserts	10, 0.02
Chewing gum	0.80

DIMETHYL HYDROQUINONE
(See p-Dimethoxybenzene)

3,7-DIMETHYL-7-HYDROXYOCTANAL
(See Hydroxycitronellal)

DIMETHYLKETOL
(See Acetoin)

DIMETHYL KETONE
(See Diacetyl)

2,2-DIMETHYL-3-METHYLENENORBORNANE
(See Camphene)

3,7-DIMETHYL-2,6-OCTADIENAL
(See Citral)

3,7-DIMETHYL-2,6-OCTADIENAL DIETHYL ACETAL
(See Citral diethyl acetal)

3,7-DIMETHYL-2,6-OCTADIENAL DIMETHYL ACETAL
(See Citral dimethyl acetal)

3,7-DIMETHYL-1,6-OCTADIEN-3-OL
(See Linaloöl)

cis-3,7-DIMETHYL-2,6-OCTADIEN-1-OL
(See Nerol)

trans-3,7-DIMETHYL-2,6-OCTADIEN-1-OL
(See Geraniol)

3,7-DIMETHYL-1,7-OCTANEDIOL
(See Hydroxycitronellol)

3,7-DIMETHYLOCTAN-3-OL
(See Tetrahydrolinalool)

2,6-DIMETHYL OCTANAL

Chemical formula: $CH_3CH_2CH(CH_3)(CH_2)_3CH(CH_3)CHO$

Flavors in which used:
Melon

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.44
Ice cream, ices	3.2
Candy	1.9
Baked goods	1.9

3,7-DIMETHYL-1-OCTANOL

Chemical formula: $(CH_3)_2CH(CH_2)_3CH(CH_3)CH_2CH_2OH$

Flavors in which used:
Floral, rose, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.3
Ice cream, ices	44, 2
Candy	15
Baked goods	19

3,7-DIMETHYL-6-OCTENAL
(See Citronellal)

3,7-DIMETHYL-6-OCTEN-1-OL
(See Rhodinol, dl-Citronellol)

3,7-DIMETHYL-7-OCTEN-1-OL

3,7-DIMETHYL-6-OCTEN-1-YL ACETATE
(See Citronellyl acetate)

3,7-DIMETHYL-6-OCTEN-1-YL BUTYRATE
(See Citronellyl butyrate)

3,7-DIMETHYL-6-OCTEN-1-YL ISOBUTYRATE
(See Citronellyl isobutyrate)

3,7-DIMETHYL-6-OCTEN-1-YL FORMATE
(See Citronellyl formate)

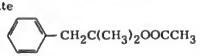
3,7-DIMETHYL-6-OCTEN-1-YL PHENYLACETATE
(See Citronellyl phenylacetate)

3,7-DIMETHYL-6-OCTEN-1-YL PROPIONATE
(See Citronellyl propionate)

3,7-DIMETHYL-6-OCTEN-1-YL VALERATE
(See Citronellyl valerate)

6,10-DIMETHYL-3-OXA-9-UNDECENAL
(See Citronelloxyacetaldehyde)

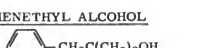
α,α-DIMETHYLPHENETHYL ACETATE
Acetic acid, α,α-Dimethylphenethyl ester
Benzyldimethyl carbinyl acetate
Benzylpropyl acetate

Chemical formula:  $CH_2C(CH_3)_2OOCCH_3$

Flavors in which used:
Cherry, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.8
Ice cream, ices	8
Candy	22
Baked goods	19
Chewing gum	2.9

α,α-DIMETHYLPHENETHYL ALCOHOL

Chemical formula:  $CH_2C(CH_3)_2OH$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.3
Ice cream, ices	3.2
Candy	4
Baked goods	5
Chewing gum	100
Jellies	3.2
Gelatin desserts	0.01

α,α-DIMETHYLPHENETHYL BUTYRATE
Butyric acid, α,α-Dimethylphenethyl ester

Chemical formula: $(C_{10}H_{13})OOC(CH_2)_2CH_3$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	10
Ice cream, ices	20
Candy	20
Baked goods	--
Puddings and gelatins	20

DIMETHYL PHENETHYL CARBINYL ACETATE
(See 2-Methyl-4-phenyl-2-butyl acetate)

DIMETHYL PHENETHYL CARBINYL ISO-BUTYRATE
(See 2-Methyl-4-phenyl-2-butyl isobutyrate)

α,α-DIMETHYLPHENETHYL FORMATE
Formic acid, α,α-Dimethylphenethyl ester

Chemical formula: $(C_{10}H_{13})OOCH$

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	10
Candy	10

DIMETHYL RESORCINOL
(See m-Dimethoxybenzene)

DIMETHYL SUCCINATE
Succinic acid, Dimethyl ester

Chemical formula: $CH_3OOCCH_2CH_2COOCH_3$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	100
Ice cream, ices	5
Candy	15
Baked goods	15
Chewing gum	5

DIMETHYL SULFIDE
(See Methyl sulfide)

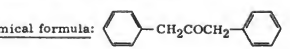
6,10-DIMETHYL-9-UNDECEN-2-ONE
(See Tetrahydro-pseudo-ionone)

DIOXYMETHYLENE PROTOCATECHUIC ALDEHYDE
(See Piperonal)

DIPENTENE
(See d-Limonene)

DIPHENYL KETONE
(See Benzophenone)

1,3-DIPHENYL-2-PROPANONE

Chemical formula:  CH_2COCH_2

1,3-DIPHENYL-2-PROPANONE (cont'd)

Flavors in which used:
Fruit, honey, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.7
Ice cream, ices	4.5
Candy	9.5
Baked goods	13

DIPROPYL DISULFIDE
Propyl disulfide

Chemical formula: $CH_3CH_2\text{-}CH_2\text{-}S\text{-}S\text{-}CH_2\text{-}CH_2\text{-}CH_3$

Flavors in which used:
Onion imitation

Natural food occurrence:
Onion

Foods in which used:	Approx. Avg Maximum ppm
Pickle products	9.6
Baked goods	5
Others	3

DIPROPYL KETONE
(See 4-Heptanone)

γ-DODECALACTONE
4-Hydroxydodecanoic acid, γ-Lactone
γ-Octyl-γ-butyrolactone

Chemical formula: $CH_3(CH_2)_7$

Flavors in which used:
Butter, butterscotch, coconut, fruit, maple, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.3
Ice cream, ices	4.3
Candy	13
Baked goods	11
Gelatins and puddings	0.15
Jellies	0.01

δ'-DODECALACTONE

Chemical formula: $CH_3(CH_2)_6CHCH_2CH_2CH_2$ 

Flavors in which used:
Butter, fruit, pear

Natural food occurrence:
Butter, cream, milk

Foods in which used:	Approx. Avg Maximum ppm
Candy	0.06
Baked goods	0.06
Toppings	10

DODECANAL
(See Lauric aldehyde)

DODECANOIC ACID
(See Lauric acid)

1-DODECANOL
(See Lauryl alcohol)

DODECANYL ACETATE
(See Lauryl acetate)

2-DODECENAL

Chemical formula: $CH_3(CH_2)_8CH{=}CHCHO$

Flavors in which used:
Citrus

Natural food occurrence:
Orange

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.9
Ice cream, ices	3.1
Candy	2.8
Baked goods	2.8

DODECOIC ACID
(See Lauric acid)

DODECYL ACETATE
(See Lauryl acetate)

DODECYL ALCOHOL
(See Lauryl alcohol)

DRACYLIC ACID
(See Benzoic acid)

ENANTHAL
(See Heptanal)

ENANTHALDEHYDE
(See Heptanal)

ENANTHIC ALCOHOL
(See Heptyl alcohol)

ENANTHYL ALCOHOL
(See Heptyl alcohol)

ENZACTIN
(See (tri-) Acetin)

1,8-EPOXY-p-MENTHANE
(See Eucalyptol)

EQUISETIC ACID
(See Aconitic acid)

ESDRAGOL
(See Estragole)

ESTRAGOLE

Chemical formula: $CH_2{=}CHCH_2$–C$_6$H$_4$–OCH_3

Flavors in which used:
Fruit, licorice, anise, spice

Natural food occurrence:
Anise and anise star, basil, estragon oil, pimento oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	10
Ice cream, ices	11
Candy	36
Baked goods	41
Chewing gum	150
Condiments	2

ETHANAL
(See Acetaldehyde)

ETHANOIC ACID
(See Acetic acid)

ETHONE
(See 1-(p-Methoxyphenyl)-1-penten-3-one)

ETHOVAN
(See Ethyl vanillin)

6-ETHOXY-m-ANOL
(See Propenyl guaethol)

p-ETHOXYBENZALDEHYDE

Chemical formula: CH_3CH_2O–C$_6$H$_4$–CHO

Flavors in which used:
Fruit, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.08, 0.06
Ice cream, ices	0.50, 0.36
Candy	1, 1
Baked goods	1, 1

2-ETHOXY-p-CYMENE
(See Carvacryl ethyl ether)

3-ETHOXY-4-HYDROXYBENZALDEHYDE
(See Ethyl vanillin)

1-ETHOXY-2-HYDROXY-4-PROPENYLBENZENE
(See Propenyl guaethol)

2-ETHOXYNAPHTHALENE
(See β-Naphthyl ethyl ether)

2-ETHOXY-5-PROPENYLANISOLE
(See Isoeugenyl ethyl ether)

ETHYL ACETATE
Acetic acid, Ethyl ester

Chemical formula: $CH_3COOCH_2CH_3$

Flavors in which used:
Blackberry, raspberry, strawberry, butter, lemon, apple, banana, cherry, grape, peach, pineapple, brandy, muscatel, rum, whisky, mint, almond, cream soda

Natural food occurrence:
Apple, banana, grape juice (concord), grapes, pineapple, raspberries, strawberries

Foods in which used:	Approx. Avg Maximum ppm
Beverages	67
Ice cream, ices	99
Candy	170
Baked goods	170
Chewing gum	1,400
Gelatins and puddings	200
Liquor	65, 50

ETHYLACETIC ACID
(See Butyric acid)

ETHYL ACETOACETATE
Acetoacetic acid, Ethyl ester

Chemical formula: $CH_3COCH_2COOCH_2CH_3$

Flavors in which used:
Loganberry, strawberry, apple, apricot, cherry, peach, liquor, muscatel

Natural food occurrence:
Strawberries

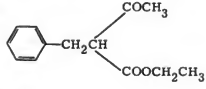
Foods in which used:	Approx. Avg Maximum ppm
Beverages	17
Ice cream, ices	24
Candy	110
Baked goods	120
Chewing gum	530
Gelatin desserts	93

ETHYL ACETONE
(See 2-Pentanone)

ETHYL α-ACETYLHYDROCINNAMATE
(See Ethyl 2-acetyl-3-phenylpropionate)

ETHYL 2-ACETYL-3-PHENYLPROPIONATE
2-Acetyl-3-phenylpropionic acid, Ethyl ester

Chemical formula:

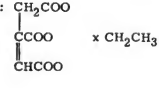


Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5, 0.10
Ice cream, ices	2
Candy	7

ETHYL ACONITATE
Aconitic acid, Ethyl ester

Chemical formula:



Flavors in which used:
Fruit, liquor, rum

Natural food occurrence:
Beet root, sugar cane

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.6
Ice cream, ices	12
Candy	55
Baked goods	66
Gelatin desserts	2.5

ETHYL ACRYLATE
Acrylic acid, Ethyl ester

Chemical formula: $CH{=}CHCOOCH_2CH_3$

Flavors in which used:
Fruit, liquor, rum

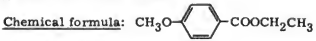
Natural food occurrence:
Pineapples, raspberries

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.26, 0.13
Ice cream, ices	0.53
Candy	1.1
Baked goods	1.1
Chewing gum	0.10, 0.10

ETHYL AMYL KETONE
(See 3-Octanone)

ETHYL p-ANISATE
p-Anisic acid, Ethyl ester

Chemical formula:

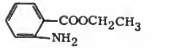


Flavors in which used:
Berry, fruit, grape, licorice, anise, liquor, rum, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.2
Ice cream, ices	0.96
Candy	8.8
Baked goods	7.2

ETHYL ANTHRANILATE
Anthranilic acid, Ethyl ester

Chemical formula:



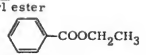
ETHYL ANTHRANILATE (cont'd)

Flavors in which used:
Berry, mandarin, orange, floral. jasmine, neroli, fruit, grape, peach, raisin

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.9
Ice cream, ices	4.7
Candy	19
Baked goods	23
Gelatin desserts	14
Chewing gum	79

ETHYL BENZENECARBOXYLATE
(See Ethyl benzoate)

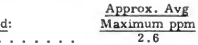
ETHYL BENZOATE
Benzoic acid, Ethyl ester

Chemical formula: 

Flavors in which used:
Currant, raspberry, strawberry, fruit, cherry, grape, liquor, nut, walnut, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.6
Ice cream, ices	2.8
Candy	9
Baked goods	10
Gelatin desserts	0.06
Chewing gum	59
Liquors	0.50

ETHYL BENZOYLACETATE
Benzoylacetic acid, Ethyl ester

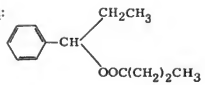
Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.70
Ice cream, ices	5
Candy	10
Baked goods	10

ETHYL BENZYL ACETOACETATE
(See Ethyl 2-acetyl-3-phenylpropionate)

α-ETHYL BENZYL BUTYRATE
Butyric acid, α-Ethylbenzyl ester

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1, 0.13
Ice cream, ices	0.20, 0.12
Candy	1
Baked goods	0.14

2-ETHYL BUTYL ACETATE
Acetic acid, 2-Ethyl butyl ester

Chemical formula: $(CH_3CH_2)_2CHCH_2OOCCH_3$

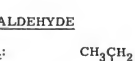
Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5
Ice cream, ices	2
Candy	7, 0.03

2-ETHYL-3-BUTYLACROLEIN
(See 2-Ethyl-2-heptenal)

ETHYL BUTYL KETONE
(See 3-Heptanone)

2-ETHYLBUTYRALDEHYDE

Chemical formula: 

Flavors in which used:
Chocolate

Foods in which used:	Approx. Avg Maximum ppm
Beverages	10
Ice cream, ices	40
Candy	25, 0.12
Baked goods	20, 0.20

ETHYL BUTYRATE
Butyric acid, Ethyl ester

Chemical formula: $CH_3CH_2CH_2COOCH_2CH_3$

ETHYL BUTYRATE (cont'd)

Flavors in which used:
Blueberry, raspberry, strawberry, butter, caramel, cream, orange, banana, cherry, grape, peach, pineapple, rum, walnut, egg nog

Natural food occurrence:
Apples, strawberries

Foods in which used:	Approx. Avg Maximum ppm
Beverages	28
Ice cream, ices	44
Candy	98
Baked goods	93
Gelatins and puddings	54
Chewing gum	1,400

ETHYL ISOBUTYRATE
Isobutyric acid, Ethyl ester

Chemical formula: $(CH_3)_2CHCOOCH_2CH_3$

Flavors in which used:
Strawberry, fruit, cherry, butter

Foods in which used:	Approx. Avg Maximum ppm
Beverages	10
Ice cream, ices	25
Candy	73
Baked goods	200
Gelatin desserts	6.0
Topping	1.5

α-ETHYLBUTYRIC ACID
(See Ethylbutyric acid)

2-ETHYLBUTYRIC ACID

Chemical formula: $CH_3CH_2CH(CH_2CH_3)COOH$

Flavors in which used:
Fruit, nut, walnut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5
Ice cream, ices	20
Candy	35, 20
Baked goods	20

ETHYL BUTYROLACTONE
(See γ-Hexalactone)

ETHYL CARVACROL
(See Carvacryl ethyl ether)

ETHYL CINNAMATE
Cinnamic acid, Ethyl ester

Chemical formula: 

Flavors in which used:
Raspberry, strawberry, cherry, grape, peach, plum, spice, cinnamon, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.1
Ice cream, ices	8.8
Candy	9.5
Baked goods	12
Gelatin desserts	2.4
Chewing gum	11

ETHYL CITRATE
(See Triethyl citrate)

ETHYL CYCLOHEXANEPROPIONATE
Cyclohexanepropionic acid, Ethyl ester

Chemical formula: 

Flavors in which used:
Pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	9
Ice cream, ices	--
Candy	30, 0.03
Baked goods	24

ETHYL CYCLOHEXYLPROPIONATE
(See Ethyl cyclohexanepropionate)

ETHYL DECANOATE
Decanoic acid, Ethyl ester

Chemical formula: $CH_3(CH_2)_8COOCH_2CH_3$

Flavors in which used:
Strawberry, cherry, grape, pineapple, liquor, brandy, cognac, rum

Natural food occurrence:
Cognac (green oil), cognac (white oil)

ETHYL DECANOATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.1
Ice cream, ices	4.5
Candy	8.3
Baked goods	23
Gelatin desserts	5.3
Liqueurs	10, 3.0

ETHYL DODECANOATE
(See Ethyl laurate)

trans-1,2-ETHYLENEDICARBOXYLIC ACID
(See Fumaric acid)

ETHYL ISOEUGENOL
(See Isoeugenyl)

ETHYL FORMATE
Formic acid, Ethyl ester

Chemical formula: $HCOOCH_2CH_3$

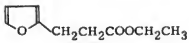
Flavors in which used:
Blueberry, raspberry, strawberry, butter, butterscotch, apple, apricot, banana, cherry, grape, peach, plum, pineapple, tutti fruiti, brandy, rum, sherry, whisky

Natural food occurrence:
Apples, coffee extract

Foods in which used:	Approx. Avg Maximum ppm
Beverages	9.4
Ice cream, ices	21
Candy	50
Baked goods	98
Liquor	10
Gelatin desserts	11, 0.35
Chewing gum	430

ETHYLFORMIC ACID
(See Propionic acid)

ETHYL 2-FURANPROPIONATE
2-Furanpropionic acid, Ethyl ester

Chemical formula: 

Flavors in which used:
Raspberry, apple, cherry, pineapple

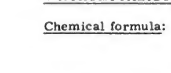
Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.6
Ice cream, ices	1.6
Candy	5.6
Baked goods	7.5

ETHYL FURFURYLHYDRACRYLATE
(See Ethyl 2-furanpropionate)

2-ETHYL-3-FURYLACROLEIN
(See 2-Furfurylidene butyraldehyde)

ETHYL FURYLPROPIONATE
(See Ethyl 2-furanpropionate)

4-ETHYLGUAIACOL

Chemical formula: 

Flavors in which used:
Coffee, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.05
Ice cream, ices	1.1
Gelatin desserts	0.23

ETHYL HEPTANOATE
Heptanoic acid, Ethyl ester

Chemical formula: $CH_3(CH_2)_5COOCH_2CH_3$

Flavors in which used:
Blueberry, strawberry, butter, butterscotch, coconut, apple, cherry, grape, melon, peach, pineapple, plum, vanilla, cheese, nut, rum, brandy, cognac

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6.8
Ice cream, ices	7.5
Candy	17
Baked goods	24
Gelatins and puddings	350, 0.06
Chewing gum	340
Liqueurs	20, 8.5

2-ETHYL-2-HEPTENAL

Chemical formula: $CH_3(CH_2)_3CH{=}C(CH_2CH_3)CHO$

Flavors in which used:
Pineapple

2-ETHYL-2-HEPTENAL (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.40
Candy	2, 0.03

ETHYL HEXADECANOATE
(See Ethyl palmitate)

ETHYL 2,4-HEXADIENOATE
(See Ethyl sorbate)

ETHYL HEXANOATE
Hexanoic acid, Ethyl ester

Chemical formula: $CH_3(CH_2)_4COOCH_2CH_3$

Flavors in which used:
Fruit, rum, nut, cheese

Natural food occurrence:
Apples, pineapple, strawberries

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7.0
Ice cream, ices	18
Candy	12
Baked goods	12
Gelatin desserts	10
Chewing gum	32
Jelly	1.3

2-ETHYL HEXYL ACETATE
(See Octyl acetate)

ETHYL HYDROCINNAMATE
(See Ethyl 2-phenylpropionate)

ETHYL g-HYDROXYPROPIONATE
(See Ethyl lactate)

ETHYL LACTATE
Lactic acid, Ethyl ester

Chemical formula: $CH_3CH(OH)COOCH_2CH_3$

Flavors in which used:
Strawberry, butter, butterscotch, coconut, grape, rum, maple, cheese, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.4
Ice cream, ices	17
Candy	28
Baked goods	52
Gelatin desserts	8.3
Chewing gum	3,100, 580
Sirup	35
Brandy	1,000

ETHYL LAURATE
Dodecanoic acid, Ethyl ester

Chemical formula: $CH_3(CH_2)_{10}COOCH_2CH_3$

Flavors in which used:
Berry, coconut, fruit, grape, liquor, cognac, rum, nut, spice, nutmeg, cheese

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.7
Ice cream, ices	3.7
Candy	17
Baked goods	17
Gelatins and puddings	4.4
Chewing gum	39
Liqueurs	3

ETHYL LEVULINATE
Levulinic acid, Ethyl ester

Chemical formula: $CH_3CO(CH_2)_2COOCH_2CH_3$

Flavors in which used:
Apple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.8
Ice cream, ices	11
Candy	12
Baked goods	12

ETHYL MALATE
(See Diethyl malate)

4-ETHYL-2-METHOXYPHENOL
(See 4-Ethylguaiacol)

ETHYL trans-2-METHYL-2-BUTENOATE
(See Ethyl tiglate)

ETHYL b-METHYLBUTYRATE
(See Ethyl isovalerate)

ETHYL 2-METHYLBUTYRATE

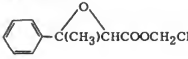
Chemical formula: $CH_3CH_2\underset{\displaystyle CH_3}{\underset{|}{C}}HCOOC_2H_5$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50
Ice cream, ices	3
Candy	5

ETHYL METHYL PHENYLGLYCIDATE

Ethyl 3-methyl-3-phenylglycidate
Strawberry aldehyde
Aldehyde C-16 pure (so-called)

Chemical formula: 

Flavors in which used:
Berry, loganberry, raspberry, strawberry, coconut, fruit, cherry, grape, pineapple, liquor, wine

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.6
Ice cream, ices	6.7
Candy	21
Baked goods	21
Gelatins and puddings	13
Chewing gum	470

ETHYL 3-METHYL-3-PHENYLGLYCIDATE

(See Ethyl methyl phenylglycidate)

ETHYL MYRISTATE

Tetradecanoic acid, Ethyl ester

Chemical formula: $CH_3(CH_2)_{12}COOCH_2CH_3$

Flavors in which used:
Coconut, fruit, honey, cognac

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6.7
Ice cream, ices	8
Candy	10
Baked goods	14
Liqueurs	30

ETHYL 2-NAPHTHYL ETHER

(See β-Naphthyl ethyl ether)

ETHYL NITRITE

Chemical formula: CH_3CH_2ONO

Flavors in which used:
Strawberry, cherry, pineapple, liquor, brandy, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3
Ice cream, ices	4.5
Candy	8, 0.10
Baked goods	0.10
Chewing gum	3.9
Sirup	52
Icings	13

ETHYL NONANOATE

Nonanoic acid, Ethyl ester

Chemical formula: $CH_3(CH_2)_7COOCH_2CH_3$

Flavors in which used:
Fruit, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.9
Ice cream, ices	4
Candy	14
Baked goods	15
Gelatin desserts	15
Chewing gum	580
Icings	39
Liqueurs	20

ETHYL 2-NONYNOATE

Ethyl octyne carbonate

Chemical formula: $CH_3(CH_2)_5C{:}CCOOCH_2CH_3$

Flavors in which used:
Berry, fruit, melon

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.56
Ice cream, ices	0.55
Candy	0.52
Baked goods	1.2

ETHYL OCTANOATE

Octanoic acid, Ethyl ester

Chemical formula: $CH_3(CH_2)_6COOCH_2CH_3$

ETHYL OCTANOATE (cont'd)

Flavors in which used:
Strawberry, butter, citrus, apple, pineapple, rum, nut, cheese

Natural food occurrence:
Cognac (green oil), cognac (white oil)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.1
Ice cream, ices	2.4
Candy	9
Baked goods	11
Gelatin desserts	2.7, 0.10
Chewing gum	4, 60

ETHYL OCTYNE CARBONATE
(See Ethyl 2-nonynoate)

ETHYL OLEATE
Oleic acid, Ethyl ester

Chemical formula: $CH_3(CH_2)_7CH{=}CH(CH_2)_7COOCH_2CH_3$

Flavors in which used:
Butter, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.10
Ice cream, ices	0.10
Candy	0.10, 40
Baked goods	0.10, 55
Gelatins and puddings	0.10

ETHYL 3-OXOBUTANOATE
(See Ethyl acetoacetate)

ETHYL OXYHYDRATE
(See Rum ether)

ETHYL PALMITATE
Hexadecanoic acid, Ethyl ester

Chemical formula: $CH_3(CH_2)_{16}COOCH_2CH_3$

Flavors in which used:
Butter, rum

Foods in which used:	Approx. Avg Maximum ppm
Ice cream, ices	20
Candy	40
Baked goods	20

ETHYL PHENYLACETATE
Phenylacetic acid, Ethyl ester

Chemical formula: 

Flavors in which used:
Butter, honey, apricot, cherry

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.4
Ice cream, ices	5.2
Candy	8.1
Baked goods	6
Sirups	24

ETHYL PHENYLACRYLATE
(See Ethyl cinnamate)

ETHYL 4-PHENYLBUTYRATE
4-Phenylbutyric acid, Ethyl ester

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1, 0.06
Candy	0.06

ETHYL 3-PHENYLGLYCIDATE

Chemical formula: 

Flavors in which used:
Berry, strawberry, fruit, cherry

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.6
Ice cream, ices	12
Candy	18
Baked goods	20
Gelatin desserts	10, 70

ETHYL 3-PHENYLPROPENOATE
(See Ethyl cinnamate)

ETHYL 3-PHENYLPROPIONATE
3-Phenylpropionic acid, Ethyl ester

Chemical formula: 

ETHYL 3-PHENYLPROPIONATE (cont'd)

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.8
Ice cream, ices	1
Candy	2.5
Baked goods	0.50, 3

ETHYL 1-PROPENE-1,2,3-TRICARBOXYLATE
(See Ethyl aconitate)

ETHYL PROPIONATE
Propionic acid, Ethyl ester

Chemical formula: $CH_3CH_2COOCH_2CH_3$

Flavors in which used:
Butter, fruit, rum

Natural food occurrence:
Apples

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7.7
Ice cream, ices	29
Candy	78
Baked goods	110
Gelatin desserts	15, 10
Chewing gum	1,100

ETHYL PYRUVATE
Pyruvic acid, Ethyl ester

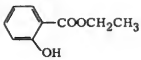
Chemical formula: $CH_3COCOOCH_2CH_3$

Flavors in which used:
Chocolate, fruit, rum, maple, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	50
Ice cream, ices	20, 150
Candy	35
Baked goods	40

ETHYL SALICYLATE
Salicylic acid, Ethyl ester

Chemical formula:



Flavors in which used:
Fruit, root beer, sassafras, wintergreen

Natural food occurrence:
Raspberries, strawberries

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.8
Ice cream, ices	11
Candy	10
Baked goods	16
Gelatins and puddings	0.04
Chewing gum	16

ETHYL SEBACATE
(See Diethyl sebacate)

ETHYL SORBATE
Sorbic acid, Ethyl ester

Chemical formula: $CH_3CH{=}CHCH{=}CHCOOCH_2CH_3$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.5
Ice cream, ices	14
Candy	15
Baked goods	18

ETHYL TETRADECANOATE
(See Ethyl myristate)

ETHYL TIGLATE
Tiglic acid, Ethyl ester

Chemical formula: $CH_3CH{=}C(CH_3)COOCH_2CH_3$

Flavors in which used:
Raspberry, strawberry, pineapple, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.3
Ice cream, ices	6.0
Candy	20
Baked goods	6.5

ETHYL 10-UNDECENOATE
10-Undecylenic acid, Ethyl ester

Chemical formula: $H_2C{=}CH(CH_2)_8COOCH_2CH_3$

Flavors in which used:
Coconut, fruit, cognac, nut

ETHYL 10-UNDECENOATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.7
Ice cream, ices	8.7
Candy	10
Baked goods	11
Liquor	5

ETHYL VALERATE

Valeric acid, Ethyl ester

Chemical formula: $CH_3(CH_2)_3COOCH_2CH_3$

Flavors in which used:

Butter, apple, apricot, peach, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.2
Ice cream, ices	4.4
Candy	15
Baked goods	8.3
Gelatin desserts	5.5
Chewing gum	260

ETHYL ISOVALERATE

Isovaleric acid, Ethyl ester

Chemical formula: $(CH_3)_2CHCH_2COOCH_2CH_3$

Flavors in which used:

Fruit, rum, cheese, nut

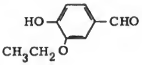
Natural food occurrence:

Pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.9
Ice cream, ices	7.5
Candy	29
Baked goods	27
Gelatin dessert	5
Chewing gum	430, 80

ETHYL VANILLIN

Chemical formula:



Flavors in which used:

Raspberry, strawberry, butter, butterscotch, caramel, rum butter, chocolate, cocoa, citrus, coconut, macaroon, cola, fruit, cherry, grape, honey, liquor, muscatel, rum, maple, nut, pecan, root beer, vanilla, cream soda

Foods in which used:	Approx. Avg Maximum ppm
Beverages	20
Ice cream, ices	44
Candy	65
Baked goods	58
Gelatin and puddings	74
Chewing gum	110
Chocolate	250
Imitation vanilla extract	28,000
Liquor	100
Icings and toppings	200, 140

EUCALYPTOL

Chemical formula:

Flavors in which used:

Mint

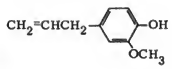
Natural food occurrence:

Allspice, star anise, basil, bay and bay-leaves extract, cajaput oil, calamus and calamus oil, caraway, laurel-leaves oil, peppermint oil, pimento oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.13
Ice cream, ices	0.50
Candy	15
Baked goods	4, 0.50
Chewing gum	190

EUGENOL

Chemical formula:



Flavors in which used:

Fruit, nut, spice

Natural food occurrence:

Allspice, basil, bay and bay leaves, calamus and calamus oil, pimento oil, laurel-leaves oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.4
Ice cream, ices	3.1
Candy	32
Baked goods	33
Gelatin desserts	0.60
Chewing gum	500
Meats	2,000, 40
Condiments	100, 9.6

ISOEUGENOL

Chemical formula: $CH_3CH{=}CH$– (C$_6$H$_3$–OH, OCH_3)

Flavors in which used:
Fruit, mint, spice, cinnamon, clove

Natural food occurrence:
Mace oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.7
Ice cream, ices	3.8
Candy	5
Baked goods	11
Chewing gum	1,000, 0.30
Condiments	1

EUGENYL ACETATE

Acetic acid, Eugenyl ester
Acetyl eugenol

Chemical formula: $CH_2{=}CHCH_2$– (C$_6$H$_3$–$OOCCH_3$, OCH_3)

Flavors in which used:
Berry, fruit, mint, spice, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.43
Ice cream, ices	3.3
Candy	20
Baked goods	10
Chewing gum	100, 25
Condiments	2

ISOEUGENYL ACETATE

Acetic acid, Isoeugenyl ester
Acetyl isoeugenyl
Methoxy-4-acetoxypropenyl benzene

Chemical formula: CH_3COO– (C$_6$H$_3$–$CH{=}CHCH_3$, CH_3O)

Flavors in which used:
Berry, fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.44
Ice cream, ices	2.1
Candy	17
Baked goods	17
Chewing gum	100

EUGENYL BENZOATE

Benzoic acid, Eugenyl ester

Chemical formula: $CH_2{=}CHCH_2$– (C$_6$H$_3$–OOC–C$_6$H$_5$, OCH_3)

Flavors in which used:
Fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.13, 0.03
Ice cream, ices	2, 0.25
Candy	10, 0.25
Baked goods	10, 0.13

ISOEUGENYL ETHYL ETHER

2-Ethoxy-5-propenylanisole

Chemical formula: CH_3CH_2O– (C$_6$H$_3$–$CH{=}CHCH_3$, CH_3O)

Flavors in which used:
Fruit, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7.8
Ice cream, ices	0.50
Candy	17
Baked goods	3.5, 1

EUGENYL FORMATE

Formic acid, Eugenyl ester

Chemical formula: $CH_2{=}CHCH_2$– (C$_6$H$_3$–$OOCH$, OCH_3)

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Condiments	0.20

ISOEUGENYL FORMATE

Formic acid, Isoeugenyl ester

Chemical formula: $CH_3CH{=}CH$– (C$_6$H$_3$–$OOCH$, OCH_3)

Flavors in which used:
Spice

ISOEUGENYL FORMATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Condiments	0.20

EUGENYL METHYL ETHER
4-Allylveratrole

Chemical formula: $CH_2=CHCH_2$ (–OCH, OCH_3)

Flavors in which used:
Raspberry, strawberry, fruit, spice, clove, ginger

Foods in which used:	Approx. Avg Maximum ppm
Beverages	10
Ice cream, ices	4.8
Candy	11
Baked goods	13
Jellies	52

ISOEUGENYL METHYL ETHER
4-Propenylveratrole

Chemical formula: $CH_3CH=CH$ (–OCH_3, OCH_3)

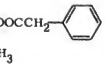
Flavors in which used:
Raspberry, strawberry, cherry, clove

Natural food occurrence:
Oil of cymbopogon javanensis

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4
Ice cream, ices	7.7
Candy	13
Baked goods	18
Gelatin desserts	0.10
Chewing gum	110

ISOEUGENYL PHENYLACETATE
Phenylacetic acid, Isoeugenyl ester

Chemical formula:

$CH_3CH=CH$ (–$OOCCH_2$  , OCH_3)

Flavors in which used:
Fruit, honey, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.05
Ice cream, ices	0.2
Candy	3
Baked goods	3, 2

EXALTOLIDE
(See ω-Pentadecalactone)

FARNESOL

Chemical formula:

$CH_3C(CH_3)=CHCH_2CH_2C(CH_3)=CHCH_2CH_2C(CH_3)=CHCH_2OH$

Flavors in which used:
Berry, apricot, banana, cherry, melon, peach, citrus, fruit, raspberry, strawberry

Natural food occurrence:
Ambrette seed, star anise, cassie (absolute), linden flowers, oil of musk seed

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.76
Ice cream, ices	0.40
Candy	1.4
Baked goods	1.7
Gelatin desserts	0.10

2-FENCHANOL
(See Fenchyl alcohol)

FENCHOL
(See Fenchyl alcohol)

d-FENCHONE

Chemical formula: 

Flavors in which used:
Berry, liquor, spice

Natural food occurrence:
Common fennel

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.13, 0.80
Ice cream, ices	0.25
Candy	0.25, 30
Baked goods	0.25
Liqueurs	5

FENCHYL ALCOHOL

Chemical formula: 

Flavors in which used:
Berry, lime, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.8
Ice cream, ices	0.25
Candy	4.7
Baked goods	0.25

FORMIC ACID

Chemical formula: HCOOH

Flavors in which used:
Fruit

Natural food occurrence:
Apples, mace oil, peaches, raspberries, strawberries, tobacco leaves, valerian-root extract

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	5
Candy	18, 5
Baked goods	6.1, 5

FORMIC ETHER
(See Ethyl formate)

FUMARIC ACID

Chemical formula: HOOCCH=CHCOOH (trans)

Flavors in which used:
Apple, peach, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	50
Baked goods	1,300
Gelatin desserts	3,600

2-FURALDEHYDE
(See Furfural)

2-FURANACROLEIN
(See Furyl acrolein)

2-FURANCARBINOL
(See Furfuryl alcohol)

2-FURANMETHANETHIOL
(See Furfuryl mercaptan)

FURFURAL

Chemical formula: 

Flavors in which used:
Butter, butterscotch, caramel, coffee, fruit, brandy, rum, rye, molasses, nut, cassia

Natural food occurrence:
Angelica-root oil, apples, coffee, peaches, skim milk (heated), oil of lime, oil of lavandin, oil of lavender

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4
Ice cream, ices	13
Candy	12
Baked goods	17
Gelatin dessert	0.80
Sirups	30
Spirits	10

FURFURALACETONE
(See 4-(2-Furyl)-3-buten-2-one)

FURFURALCOHOL
(See Furfuryl alcohol)

FURFURYL ACETATE
Acetic acid, Furfuryl ester

Chemical formula: 

Flavors in which used:
Raspberry, fruit, spice, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	11
Ice cream, ices	17
Candy	37
Baked goods	1, 40
Chewing gum	500

FURFURYL ALCOHOL

Chemical formula:

Flavors in which used:
Butter, butterscotch, caramel, coffee, fruit, brandy

Natural food occurrence:
Coffee, cognac oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	19
Ice cream, ices	88
Candy	59
Baked goods	110
Spirits	10

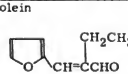
FURFURYLIDENE ACETONE

(See 4-(2-Furyl)-3-buten-2-one)

2-FURFURYLIDENE BUTYRALDEHYDE

2-Ethyl-3-furylacrolein

Chemical formula:



Flavors in which used:
Fruit, liquor, rum, nut, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50
Ice cream, ices	0.50, 3
Candy	2, 6
Baked goods	2, 6

FURFURYL MERCAPTAN

2-Furanmethanethiol

Chemical formula:

Flavors in which used:
Chocolate, coffee, fruit, nut

Natural food occurrence:
Coffee

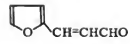
Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.52
Ice cream, ices	0.78
Candy	2
Baked goods	2.1
Gelatin desserts	0.10
Icings	0.50

FURYL ACETONE

(See (2-Furyl) propanone)

FURYL ACROLEIN

Chemical formula:



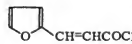
Flavors in which used:
Coffee, fruit, cassia, cinnamon

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.17
Ice cream, ices	6.1
Candy	36
Baked goods	21
Gelatins and puddings	0.10, 0.56

4-(2-FURYL)-3-BUTEN-2-ONE

Furfurylidene acetone
Furfuralacetone

Chemical formula:



Flavors in which used:
Nut, almond, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.2
Ice cream, ices	4.8
Candy	33
Baked goods	46
Gelatin desserts	1.6

α-FURYLCARBINOL

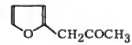
(See Furfuryl alcohol)

2-FURYLCARBINOL

(See Furfuryl alcohol)

(2-FURYL)-2-PROPANONE

Chemical formula:



(2-FURYL)-2-PROPANONE (cont'd)

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Ice cream, ices	5
Candy	3.8, 20
Baked goods	2.0, 20

FUSEL, OIL, REFINED

Major ingredient: Amyl alcohol

Flavors in which used:
Grape, brandy, cordials, rum, rye, scotch, whisky, wine

Natural food occurrence:
Cognac oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	21
Ice cream, ices	4.1
Candy	30
Baked goods	34
Chewing gum	270
Gelatins and puddings	4
Liquors	2.5

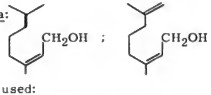
GALLOTANNIC ACID
(See Tannic acid)

GARDENOL
(See α-Methylbenzyl acetate)

GERANIAL
(See Citral)

GERANIOL

Chemical formula:



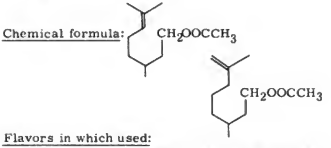
Flavors in which used:
Berry, lemon, rose, apple, cherry, peach, honey, root beer, cassia, cinnamon, ginger ale, nutmeg

Natural food occurrence:
Apples, bay leaves, cherries coriander, grapefruit, oranges, tea, ginger, mace oil, oil of lavandin, oil of lavender, oil of lemon, oil of lime, oil of mandarin, petitgrain oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.1
Ice cream, ices	3.3
Candy	10
Baked goods	11
Gelatin desserts	2
Chewing gum	0.80, 2.9
Toppings	1

GERANYL ACETATE
Acetic acid, Geranyl ester

Chemical formula:



Flavors in which used:
Berry, lemon, orange, floral, apple, grape, peach, pear, honey, spice, ginger ale

Natural food occurrence:
Oil of lavender, oil of lemon

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.6
Ice cream, ices	6.5
Candy	15
Baked goods	17
Gelatin desserts	7.5, 6.8
Chewing gum	0.30, 1.2
Sirup	1

GERANYL ACETOACETATE
Acetoacetic acid, Geranyl ester

Chemical formula: $(C_{10}H_{17})OOCCH_2COCH_3$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50
Ice cream, ices	1
Candy	1, 3
Baked goods	1, 10

GERANYL BENZOATE
Benzoic acid, Geranyl ester

Chemical formula: $(C_{10}H_{17})OOC$— 

Flavors in which used:
Floral, fruit

GERANYL BENZOATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.10, 0.13
Ice cream, ices	0.16, 0.25
Candy	0.50
Baked goods	0.50

GERANYL BUTYRATE
Butyric acid, Geranyl ester

Chemical formula: $(C_{10}H_{17})OOCCH_2CH_2CH_3$

Flavors in which used:
Berry, citrus, fruit, apple, cherry, pear, pineapple

Natural food occurrence:
Oil of lavender

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.6
Ice cream, ices	2.8
Candy	10
Baked goods	10
Gelatin desserts	5.3
Chewing gum	0.30, 1.5

GERANYL ISOBUTYRATE
Isobutyric acid, Geranyl ester

Chemical formula: $(C_{10}H_{17})OOCCH(CH_3)_2$

Flavors in which used:
Floral, rose, apple, pear, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	0.80
Candy	5
Baked goods	4.9
Gelatins and puddings	0.60
Chewing gum	15

GERANYL FORMATE
Formic acid, Geranyl ester

Chemical formula: $(C_{10}H_{17})OOCH$

Flavors in which used:
Berry, citrus, apple, apricot, peach

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.9
Ice cream, ices	1.6
Candy	7.5
Baked goods	4.1
Gelatins and puddings	3.4
Chewing gum	0.80

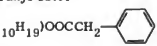
GERANYL HEXANOATE
Hexanoic acid, Geranyl ester

Chemical formula: $(C_{10}H_{17})OOC(CH_2)_4CH_3$

Flavors in which used:
Citrus, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	0.90
Candy	3.2
Baked goods	2

GERANYL PHENYLACETATE
Phenylacetic acid, Geranyl ester

Chemical formula: $(C_{10}H_{19})OOCCH_2$— 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.1
Ice cream, ices	3.1
Candy	6.7
Baked goods	4.7
Chewing gum	11

GERANYL PROPIONATE
Propionic acid, Geranyl ester

Chemical formula: $(C_{10}H_{17})OOCCH_2CH_3$

Flavors in which used:
Berry, geranium, apple, pear, pineapple, honey

Natural food occurrence:
Oil of lavender

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.5
Ice cream, ices	1.3
Candy	3.7
Baked goods	4.9
Gelatin desserts	3
Chewing gum	30, 70

GERANYL ISOVALERATE
Isovaleric acid, Geranyl ester

Chemical formula: $(C_{10}H_{17})OOCCH_2CH(CH_3)_2$

Flavors in which used:
Berry, lime, apple, peach, pineapple

GERANYL ISOVALERATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.2
Ice cream, ices	11
Candy	10
Baked goods	6.8

GLUCOSE PENTAACETATE

Chemical formula: $C_6H_7O_6(OOCCH_3)_5$

Flavors in which used:
Bitters

Foods in which used:	Approx. Avg Maximum ppm
Beverages	100
Baked goods	1,500

GLYCERYL TRIACETATE
(See (tri-) Acetin)

GLYCERYL TRIBUTYRATE
(See (tri-) Butyrin

GUAIACOL

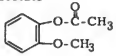
Chemical formula: 

Flavors in which used:
Coffee, fruit, rum, tobacco, smoke, vanilla

Natural food occurrence:
Celery seed, coffee

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.95
Ice cream, ices	0.52
Candy	0.96
Baked goods	0.75

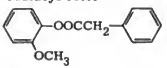
GUAIACYL ACETATE
o-Methoxy phenyl acetate

Chemical formula: 

Flavors in which used:
Berry

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.1
Ice cream, ices	4
Candy	7
Baked goods	6
Gelatin desserts	5.1
Chewing gum	15

GUAIACYL PHENYLACETATE
Phenylacetic acid, Guaiacyl ester

Chemical formula: 

Flavors in which used:
Berry, coffee, honey, tobacco, smoke

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.38
Ice cream, ices	1
Candy	2.2
Baked goods	3.2
Topping	1

GUAIYL ACETATE
Guaiac wood acetate, Acetic acid, Guaiyl ester

Chemical formula: Not established

Flavors in which used:
Tobacco, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.53
Ice cream, ices	0.78
Candy	2
Baked goods	2
Chewing gum	2.3

GUARANINE
(See Caffeine)

HELIOTROPINE
(See Piperonal)

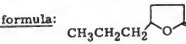
HELIOTROPYL ACETATE
(See Piperonyl acetate)

HENDECANAL
(See Undecanal)

HENDECEN-9-AL
(See 9-Undecanal)

10-HENDECENYL ACETATE
(See 10-Undecen-1-yl acetate)

γ-HEPTALACTONE
4-Hydroxyheptanoic acid, γ-Lactone

Chemical formula: 

Flavors in which used:
Coconut, nut, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	18
Ice cream, ices	40
Candy	28
Baked goods	26

HEPTALDEHYDE
(See Heptanal)

HEPTANAL

Chemical formula: $CH_3(CH_2)_5CHO$

Flavors in which used:
Citrus, apple, melon, cognac, rum, almond

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.9
Ice cream, ices	1.2
Candy	2
Baked goods	2.6
Liqueurs	4

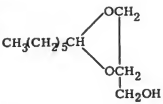
HEPTANAL DIMETHYL ACETAL

Chemical formula: $CH_3(CH_2)_5CH(OCH_3)_2$

Flavors in which used:
Fruit, melon, mushroom

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.10, 0.13
Ice cream, ices	0.25
Candy	0.25
Baked goods	0.25
Condiments	1

HEPTANAL GLYCERYL ACETAL (Mixed 1,2 and 1,3 Acetals)

Chemical formula: 

Flavors in which used:
Mushroom

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5
Ice cream, ices	10
Candy	10
Baked goods	10
Condiments	100

2,3-HEPTANEDIONE

Chemical formula: $CH_3COCO(CH_2)_3CH_3$

Flavors in which used:
Raspberry, strawberry, butter, fruit, rum, nut, cheese

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.96
Ice cream, ices	3.1
Candy	8.2
Baked goods	7.9
Chewing gum	1.7

1-HEPTANOL
(See Heptyl alcohol)

2-HEPTANONE

Chemical formula: $CH_3CO(CH_2)_4CH_3$

Flavors in which used:
Berry, butter, fruit, cheese

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.7
Ice cream, ices	6
Candy	6.4
Baked goods	13
Condiments	10, 25

3-HEPTANONE

Chemical formula: $CH_3CH_2CO(CH_2)_3CH_3$

Flavors in which used:
Melon

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.13, 2.0
Ice cream, ices	0.25, 170
Candy	67
Baked goods	0.25, 130

4-HEPTANONE

Chemical formula: $(CH_3CH_2CH_2)_2CO$

Flavors in which used:
Strawberry, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7.8
Ice cream, ices	11
Candy	19
Baked goods	27
Gelatin desserts	0.60, 8

HEPTYL ACETATE
Acetic acid, Heptyl ester

Chemical formula: $CH_3COOCH_2(CH_2)_5CH_3$

Flavors in which used:
Berry, banana, melon, pear, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.1
Ice cream, ices	3.3
Candy	4.9
Baked goods	4.8

HEPTYL ALCOHOL
1-Heptanol

Chemical formula: $CH_3(CH_2)_5CH_2OH$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.90
Ice cream, ices	1, 5
Candy	3
Baked goods	3

pri-HEPTYL ALCOHOL
(See Heptyl alcohol)

HEPTYL ALDEHYDE
(See Heptanal)

HEPTYL BUTYRATE
Butyric acid, Heptyl ester

Chemical formula: $CH_3CH_2CH_2COOCH_2(CH_2)_5CH_3$

Flavors in which used:
Raspberry, floral, violet, apricot, melon, plum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.66
Ice cream, ices	0.74
Candy	2.7
Baked goods	2.4

HEPTYL ISOBUTYRATE
Isobutyric acid, Heptyl ester

Chemical formula: $(CH_3)_2CHCOOCH_2(CH_2)_5CH_3$

Flavors in which used:
Coconut, apricot, peach, pineapple, plum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.2
Ice cream, ices	0.82
Candy	2.6
Baked goods	3

γ-HEPTYL BUTYROLACTONE
(See γ-Undecalactone)

HEPTYL CARBINOL
(See 1-Octanol)

HEPTYL CINNAMATE
Cinnamic acid, Heptyl ester

Chemical formula: 

Flavors in which used:
Berry, cherry, apricot, grape

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.3
Ice cream, ices	1, 2
Candy	1, 6
Baked goods	1
Chewing gum	270

HEPTYL FORMATE
Formic acid, Heptyl ester

Chemical formula: $HCOOCH_2(CH_2)_5CH_3$

Flavors in which used:
Apricot, peach, plum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.7
Ice cream, ices	0.87
Candy	3.6
Baked goods	3.3

HEPTYL OCTANOATE
Octanoic acid, Heptyl ester

Chemical formula: $CH_3(CH_2)_6COOCH_2(CH_2)_5CH_3$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1

HEXADECANOIC ACID
(See Palmitic acid)

1-HEXADECANOL

Chemical formula: $CH_3(CH_2)_{14}CH_2OH$

Flavors in which used:
Chocolate

Foods in which used:	Approx. Avg Maximum ppm
Ice cream, ices	2
Candy	2

ω-6-HEXADECENLACTONE
16-Hydroxy-6-hexadecenoic acid, ω-Lactone,
6-Hexadecenolide
Ambrettolide

Chemical formula:

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.32
Ice cream, ices	0.18
Candy	0.16
Baked goods	0.19
Gelatin desserts	0.01
Chewing gum	0.70

6-HEXADECENOLIDE
(See ω-6-Hexadecenlactone)

HEXADECYLIC ACID
(See Palmitic acid)

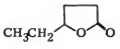
2,4-HEXADIENOATE
(See Allyl sorbate)

HEXAHYDROPYRIDENE
(See Piperidine)

HEXAHYDROTHYMOL
(See Menthol)

γ-HEXALACTONE
4-Hydroxyhexanoic acid, γ-Lactone
Ethyl butyrolactone
Tonkalide

Chemical formula:



Flavors in which used:
Butter, fruit, honey, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7
Ice cream, ices	0.07, 84
Candy	21
Baked goods	21

HEXALDEHYDE
(See Hexanal)

HEXANAL

Chemical formula: $CH_3(CH_2)_4CHO$

Flavors in which used:
Butter, fruit, honey, rum

Natural food occurrence:
Apples, coffee, cooked chicken, strawberries, tea, tobacco leaves (oils)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	2.8
Candy	3.6
Baked goods	4.2
Gelatin desserts	2, 2.5
Chewing gum	3

HEXANEDIOIC ACID
(See Adipic acid)

2,3-HEXANEDIONE

Chemical formula: $CH_3COCOCH_2CH_2CH_3$

Flavors in which used:
Strawberry, butter, citrus, banana, pineapple, rum, cheese

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6.6
Ice cream, ices	4.8
Candy	7.3
Baked goods	6.6

HEXANOIC ACID

Chemical formula: $CH_3(CH_2)_4COOH$

Flavors in which used:
Butter, butterscotch, chocolate, fruit, rum, pecan, cheese

Natural food occurrence:
Apples, butter acids, cocoa, grapes, oil of lavender, oil of lavandin, raspberries, strawberries, tea

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.8
Ice cream, ices	4.3
Candy	28
Baked goods	22
Chewing gum	1.5
Condiments	450

1-HEXANOL
(See Hexyl alcohol)

2-HEXENAL

Chemical formula: $CH_3CH_2CH_2CH{=}CHCHO$

Flavors in which used:
Berry, fruit

Natural food occurrence:
Apples, strawberries

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.1
Ice cream, ices	0.70
Candy	15
Baked goods	16

cis-3-HEXENAL

Chemical formula: $CH_3CH_2CH{=}CHCH_2CHO$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.20
Ice cream, ices	5
Candy	5

2-HEXEN-1-OL

Chemical formula: $CH_3CH_2CH_2CH{=}CHCH_2OH$

Flavors in which used:
Fruit, mint

Natural food occurrence:
Grapes

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	0.63
Candy	3.8
Baked goods	4.1

3-HEXEN-1-OL

Chemical formula: $CH_3CH_2CH{=}CHCH_2CH_2OH$

Flavors in which used:
Fruit, mint

Natural food occurrence:
Grapefruit, raspberries, tea

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	3.7
Candy	5
Baked goods	5

2-HEXEN-1-YL ACETATE
Acetic acid, 2-Hexenyl ester

Chemical formula: $CH_3CH_2CH_2CH{=}CHCH_2OOCCH_3$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.28
Ice cream, ices	0.40
Candy	1.7
Baked goods	1.7

HEXOIC ACID
(See Hexanoic acid)

HEXOIC ALDEHYDE
(See Hexanal)

HEXYL ACETATE
Acetic acid, Hexyl ester

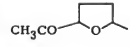
Chemical formula: $CH_3(CH_2)_4CH_2OOCCH_3$

Flavors in which used:
Berry, apple, pear, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.6
Ice cream, ices	4.6
Candy	26
Baked goods	26
Chewing gum	3

2-HEXYL-4-ACETOXYTETRAHYDROFURAN

Chemical formula:



Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	3
Candy	3
Baked goods	3

HEXYL ALCOHOL
1-Hexanol

Chemical formula: $CH_3(CH_2)_4CH_2OH$

Flavors in which used:
Berry, coconut, fruit

Natural food occurrence:
Apples, oil of lavandin, oil of lavender, strawberries, tea

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6.6
Ice cream, ices	26
Candy	21
Baked goods	18
Gelatin desserts	0.22, 0.28

HEXYL BUTYRATE
Butyric acid, Hexyl ester

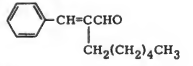
Chemical formula: $CH_3CH_2CH_2COOCH_2(CH_2)_4CH_3$

Flavors in which used:
Berry, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.6
Ice cream, ices	2.1
Candy	7.8
Baked goods	8.6

α-HEXYLCINNAMALDEHYDE

Chemical formula:



Flavors in which used:
Berry, fruit, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.80
Ice cream, ices	2.6
Candy	6.5
Baked goods	2.4
Gelatin desserts	0.05

HEXYLENE GLYCOL DIACETATE
(See 1,3-Nonanediol acetate (mixed esters))

HEXYL FORMATE
Formic acid, Hexyl ester

Chemical formula: $HCOOCH_2(CH_2)_4CH_3$

Flavors in which used:
Raspberry, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	12
Ice cream, ices	45
Candy	39
Baked goods	52

HEXYL 2-FUROATE
2-Furoic acid, Hexyl ester

Chemical formula:

Flavors in which used:
Coffee, maple, mushroom

HEXYL 2-FUROATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Candy	0.31
Condiments	0.20

HEXYL HEXANOATE
Hexanoic acid, Hexyl ester

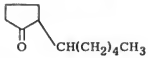
Chemical formula: $CH_3(CH_2)_4COOCH_2(CH_2)_4CH_3$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.5, 3
Ice cream, ices	2.5
Candy	3.6, 10
Baked goods	10

2-HEXYLIDENE CYCLOPENTANONE

Chemical formula:

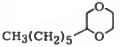


Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	5
Candy	10
Baked goods	--

2-HEXYL-5 (or 6) -KETO-1,4-DIOXANE
(1 (or 2) -Hexyl-2-hydroxyethoxy) acetic acid, δ-Lactone)

Chemical formula:



Flavors in which used:
Cream

Foods in which used:	Approx. Avg Maximum ppm
Beverages	--
Ice cream, ices	5
Candy	5
Baked goods	5
Margarine	5

HEXYL OCTANOATE
Octanoic acid, Hexyl ester

Chemical formula: $CH_3(CH_2)_6COOCH_2(CH_2)_4CH_3$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Puddings	0.70

HEXYL PROPIONATE
Propionic acid, Hexyl ester

Chemical formula: $CH_3CH_2COOCH_2(CH_2)_4CH_3$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.7
Ice cream, ices	23
Candy	21
Baked goods	22

HYACINTHIN
(See Phenylacetaldehyde)

HYDRATROPALDEHYDE
(See 2-Phenylpropionaldehyde)

HYDRATROPALDEHYDE DIMETHYL ACETAL
(See 2-Phenylpropionaldehyde dimethyl acetal)

HYDRATROPYL ALCOHOL
(See β-Methylphenethyl alcohol)

HYDRATROPYL BUTYRATE
(See 2-Phenylpropyl butyrate)

HYDRATROPYL ISOBUTYRATE
(See 2-Phenylpropyl isobutyrate)

HYDROCINNAMIC ACID
(See 3-Phenylpropionic acid)

HYDROCINNAMYL ACETATE
(See 3-Phenylpropyl acetate)

HYDROCINNAMYL ALCOHOL
(See 3-Phenyl-1-propanol)

HYDROCINNAMYL ISOBUTYRATE
(See 3-Phenylpropyl isobutyrate)

HYDROCINNAMYL CINNAMATE
(See 3-Phenylpropyl cinnamate)

HYDROCINNAMYL FORMATE
(See 3-Phenylpropyl formate)

HYDROCINNAMYL HEXANOATE
(See 3-Phenylpropyl hexanoate)

HYDROCINNAMYL PROPIONATE
(See 3-Phenylpropyl propionate)

HYDROCINNAMYL ISOVALERATE
(See 3-Phenylpropyl isovalerate)

HYDROCOUMARIN
(See Dihydrocoumarin)

HYDROQUINONE DIMETHYL ETHER
(See p-Dimethoxybenzene)

o-HYDROXYANISOLE
(See Guaiacol)

o-HYDROXYBENZALDEHYDE
(See Salicylaldehyde)

p-HYDROXYBENZYL ACETONE
(See 4-(p-Hydroxyphenyl)2-butanone)

3-HYDROXY-2-BUTANONE
(See Acetoin)

2-HYDROXYCAMPHANE
(See Borneol)

HYDROXYCITRONELLAL

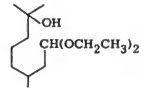
Chemical formula:

Flavors in which used:
Berry, citrus, linden, violet, cherry

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.5
Ice cream, ices	13
Candy	9.4
Baked goods	10
Gelatin desserts	0.30
Chewing gum	16

HYDROXYCITRONELLAL DIETHYL ACETAL

Chemical formula:

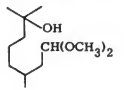


Flavors in which used:
Citrus, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.7
Ice cream, ices	0.50, 1
Candy	7.3
Baked goods	2.2

HYDROXYCITRONELLAL DIMETHYL ACETAL

Chemical formula:

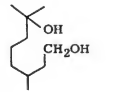


Flavors in which used:
Fruit, cherry

Foods in which used:	Approx. Avg Maximum ppm
Beverages	10
Ice cream, ices	0.50
Candy	24
Baked goods	0.50, 20

HYDROXYCITRONELLOL

Chemical formula:



Flavors in which used:
Lemon, floral, cherry

HYDROXYCITRONELLOL (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	1.6
Candy	3.6
Baked goods	3.5
Gelatin desserts	0.30
Chewing gum	0.30

2-HYDROXY-p-CYMENE
(See Carvacrol)

4-HYDROXYDECANOIC ACID, γ-LACTONE
(See γ-Decalactone)

5-HYDROXYDECANOIC ACID, δ-LACTONE
(See δ-Decalactone)

4-HYDROXYDODECANOIC ACID, γ-LACTONE
(See γ-Dodecalactone)

5-HYDROXYDODECANOIC ACID, δ-LACTONE
(See δ-Dodecalactone)

HYDROXYHEPTANE
(See Heptyl alcohol)

4-HYDROXYHEPTANOIC ACID, γ-LACTONE
(See γ-Heptalactone)

16-HYDROXY-6-HEXADECENOIC ACID, ω-LACTONE
(See ω-6-Hexadecenlactone)

4-HYDROXYHEXANOIC ACID, γ-LACTONE
(See γ-Hexalactone)

4-HYDROXY-3-METHOXY-1-ALLYLBENZENE
(See Eugenol)

4-HYDROXY-3-METHOXYBENZALDEHYDE
(See Vanillin)

4-HYDROXY-3-METHOXY-BENZYLNONANAMIDE
(See Nonanoyl 4-hydroxy-3-methoxybenzylamide)

4-(4-HYDROXY-3-METHOXYPHENYL)-2-BUTANONE
(See Zingerone)

4-HYDROXY-3-METHOXY-STYRENE
(See 2-Methoxy-4-vinyl phenol)

HYDROXYMETHYL ANETHOLE
(See Propenyl guaethol)

2-HYDROXYMETHYLFURAN
(See Furfuryl alcohol)

4-HYDROXY-3-METHYL-1-METHYLBENZENE
(See 2-Methoxy-4-methyl phenol)

1-HYDROXYMETHYL-4-ISOPROPENYL-1-CYCLOHEXENE
(See p-Mentha-1, 8-dien-7-ol)

3-HYDROXY-2-METHYL-4-PYRONE
(See Maltol)

3-HYDROXY-2-METHYL-γ-PYRONE
(See Maltol)

4-HYDROXYNONANOIC ACID, γ-LACTONE
(See γ-Nonalactone)

4-HYDROXYOCTANOIC ACID, γ-LACTONE
(See γ-Octalactone)

5-HYDROXY-4-OCTANONE

Chemical formula: $CH_3(CH_2)_2COCHOH(CH_2)_2CH_3$

Flavors in which used:
Butter, butterscotch, fruit, cheese, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50, 5
Ice cream, ices	1, 20
Candy	10
Baked goods	7.8

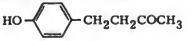
γ-HYDROXY-β-OXOBUTANE
(See Acetoin)

15-HYDROXYPENTADECANOIC ACID, ω-LACTONE
(See ω-Pentadecalactone)

4-HYDROXYPENTANOIC ACID, γ-LACTONE
(See γ-Valerolactone)

2-HYDROXY-2-PHENYLACETOPHENONE
(See Benzoin)

4-(p-HYDROXYPHENYL)-2-BUTANONE

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm	
Beverages	16	
Ice cream, ices	34	
Candy	44	
Baked goods	54	
Gelatin desserts	5	50
Chewing gum	40	320

2-HYDROXY-1,2,3-PROPANETRICARBOXYLIC ACID
(See Citric acid)

1-HYDROXYSUCCINIC ACID
(See l-Malic acid)

14-HYDROXYTETRADECANOIC ACID
(See ω-Pentadecalactone)

α-HYDROXYTOLUENE
(See Benzyl alcohol)

β-HYDROXYTRICARBALLYLIC ACID
(See Citric acid)

4-HYDROXYUNDECANOIC ACID, γ-LACTONE
(See γ-Undecalactone)

HYPNONE
(See Acetophenone)

INDOLE

Chemical formula: 

Flavors in which used:
Raspberry, strawberry, bitters, chocolate, orange, coffee, violet, fruit, nut, cheese

Natural food occurrence:
Jasmine oil, orange flowers

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.26
Ice cream, ices	0.28
Candy	0.50
Baked goods	0.58
Gelatin desserts	0.02, 0.40

α-IONONE
4-(2,6,6-Trimethyl-2-cyclohexen-1-yl)-3-buten-2-one
α-Irisone®

Chemical formula: 

Flavors in which used:
Berry, blackberry, loganberry, raspberry, citrus, orange, floral, fruit, cherry, spice, vanilla

Natural food occurrence:
Boronia, absolute

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.5
Ice cream, ices	3.6
Candy	12
Baked goods	6.7
Gelatin desserts	3.6
Chewing gum	39
Icings	50

β-IONONE
4-(2,6,6-Trimethyl-1-cyclohexen-1-yl)-3-buten-2-one
β-Irisone®

Chemical formula: 

Flavors in which used:
Berry, blackberry, loganberry, raspberry, strawberry, floral, violet, fruit, cherry, grape, pineapple, liquor, muscatel, nut, pistachio

Natural food occurrence:
Boronia, absolute

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.6
Ice cream, ices	3.4
Candy	7.6
Baked goods	5.2
Gelatin desserts	5.8
Chewing gum	89
Maraschino cherries	10

α-IRISONE ®
(See α-Ionone)

β-IRISONE ®
(See β-Ionone)

α-IRONE
4-(2,5,6,6-Tetramethyl-2-cyclohexene-1-yl)-3-buten-2-one
6-Methylionone

Chemical formula:  $CH{=}CHCOCH_3$

Flavors in which used:
Berry, raspberry, strawberry, floral, violet, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.2
Ice cream, ices	2.3
Candy	4.1
Baked goods	5.4
Chewing gum	1.4

JASMONYL
(See 1,3-Nonanediol acetate (mixed esters))

KAUTSCHIN
(See d-Limonene)

KENTONAROME
(See Methylcyclopentenolone)

KETONE C-7
(See 2-Heptanone)

KETONE ALCOHOL
(See 3-Octanon-1-ol)

KETONE ALCOHOL ESTER
(See 3-Nonanon-1-yl acetate)

2-KETOPROPIONALDEHYDE
(See Pyruvaldehyde)

α-KETOPROPIONIC ACID
(See Pyruvic acid)

LACTIC ACID

Chemical formula: $CH_3CHOHCOOH$

Flavors in which used:
Blackberry, butter, butterscotch, lime, chocolate, fruit, walnut, spice, cheese

Natural food occurrence:
Cultured milk, molasses, sauerkraut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	34
Ice cream, ices	66
Candy	130
Baked goods	89
Gelatins and puddings	14, 25
Chewing gum	610
Toppings	300
Pickles and olives	1,200, 24,000

LACTIC ACID, BUTYL ESTER, BUTYRATE
(See Butyl butyryllactate)

LARIXINIC ACID
(See Maltol)

LAURALDEHYDE
(See Lauric aldehyde)

LAURIC ACID
Dodecanoic acid

Chemical formula: $CH_3(CH_2)_{10}COOH$

Flavors in which used:
Miscellaneous

Natural food occurrence:
Oil of lemon, butter acids

Foods in which used:	Approx. Avg Maximum ppm
Beverages	15
Ice cream, ices	16
Candy	2.4
Baked goods	39
Gelatin and puddings	25

LAURIC ALDEHYDE
Dodecanal

Chemical formula: $CH_3(CH_2)_{10}CHO$

LAURIC ALDEHYDE (cont'd)

Flavors in which used:
Butter, caramel, lemon, lime, orange, tangerine, fruit, banana, neroli, honey

Natural food occurrence:
Oil of lemon, oil of lime

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.93
Ice cream, ices	1.5
Candy	2.4
Baked goods	2.8
Gelatin desserts	0.10
Chewing gum	110, 0.20

LAURINE ®
(See Hydroxycitronellal)

LAUROSTEARIC ACID
(See Lauric acid)

LAURYL ACETATE
Acetic acid, Dodecyl ester
Dodecyl acetate
Dodecanyl acetate

Chemical formula: $CH_3(CH_2)_{11}OOCCH_3$

Flavors in which used:
Butter, lemon, orange, peach, pineapple, meat

Natural food occurrence:
Oil of lime

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.3
Ice cream, ices	1.7
Candy	4.6
Baked goods	5.6

LAURYL ALCOHOL
1-Dodecanol

Chemical formula: $CH_3(CH_2)_{10}CH_2OH$

Flavors in which used:
Citrus, coconut, floral, fruit, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	1
Candy	2.8
Baked goods	1.7
Chewing gum	16, 27
Sirups	7

LEAF ALCOHOL
(See 3-Hexen-1-ol)

LEVULINIC ACID

Chemical formula: $CH_3COCH_2CH_2COOH$

Flavors in which used:
Berry, butter, caramel, fruit, maple, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	14
Ice cream, ices	14
Candy	53
Baked goods	53
Gelatin desserts	4

LICAREOL
(See Linalool)

d-LIMONENE

Chemical formula:

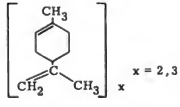
Flavors in which used:
Lime, fruit, spice

Natural food occurrence:
Star anise, buchu leaves, caraway, celery seed, oranges, coriander, cumin, cardamom, sweet fennel, common fennel, mace, marigold, oil of lavandin, oil of lemon, oil of mandarin, peppermint, petitgrain oil, pimento oil, orange leaf (absolute), orange peel (sweet oil), origanum oil, black pepper, peels of citrus, macrocarpa bunge, hops oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	31
Ice cream, ices	68
Candy	49
Baked goods	120
Gelatin desserts	48, 400
Chewing gum	2,300

POLYLIMONENE

Chemical formula:



POLYLIMONENE (cont'd)

Flavors in which used:
General fixative

Natural food occurrence:
Possible in old citrus oils

Foods in which used:	Approx. Avg Maximum ppm
Candy	4,500
Chewing gum	300
Baked goods	1,000

LINALOL
(See Linaloöl)

LINALOÖL

Chemical formula:

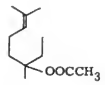
Flavors in which used:
Blueberry, chocolate, lemon, lime, orange, cola, grape, peach, cardamom, nutmeg, meat

Natural food occurrence:
Basil, bois de rose oil, cassie (abstract), coriander, cocoa, grapefruit, oranges, peaches, tea, bay and bay-leaves extract, grapefruit oil, ginger, lavandin, lavender oil, oil of lemon, oil of lime, oil of mandarin, petitgrain oil, orange leaf (absolute), orange peel (sweet oil), palma rose oil, peels of citrus, macrocarpa bunge, ho oil, hops oil, jasmine oil, laurel-leaves oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	3.6
Candy	8.4
Baked goods	9.6
Gelatin desserts	2.3
Meats	40
Chewing gum	0.80, 90

LINALYL ACETATE
Acetic acid, Linalyl ester

Chemical formula:

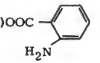


Flavors in which used:
Berry, citrus, peach, pear, ginger

Natural food occurrence:
Basil, jasmine oil, lavandin oil, lavender oil, lemon oil, peels of citrus macrocarpa bunge, petitgrain lemon oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.9
Ice cream, ices	3.8
Candy	11
Baked goods	8.9
Gelatin desserts	3.8
Chewing gum	13

LINALYL ANTHRANILATE
Anthranilic acid, Linalyl ester

Chemical formula: $(C_{10}H_{17})OOC$ 

Flavors in which used:
Berry, citrus, fruit, grape

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.8
Ice cream, ices	0.72
Candy	4.7
Baked goods	0.20, 8

LINALYL BENZOATE
Benzoic acid, Linalyl ester

Chemical formula: $(C_{10}H_{17})OOC$ 

Flavors in which used:
Berry, citrus, fruit, peach

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.31
Ice cream, ices	0.42
Candy	1.2
Baked goods	1.6
Gelatin desserts	0.28

LINALYL BUTYRATE
Butyric acid, Linalyl ester

Chemical formula: $(C_{10}H_{17})OOC(CH_2)_2CH_3$

Flavors in which used:
Loganberry, butter, caramel, citrus, floral, rose, fruit, grape, peach, pear, pineapple, plum, honey, nut, spice

LINALYL BUTYRATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.2
Ice cream, ices	4.3
Candy	2.2
Baked goods	13
Gelatin desserts	0.09

LINALYL ISOBUTYRATE

Isobutyric acid, Linalyl ester

Chemical formula: $(C_{10}H_{17})OOCCH(CH_3)_2$

Flavors in which used:

Berry, citrus, fruit, banana, black currant, cherry, pear, pineapple, plum, nut, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.7
Ice cream, ices	2.8
Candy	4.9
Baked goods	13

LINALYL CINNAMATE

Cinnamic acid, Linalyl ester

Chemical formula: $(C_{10}H_{17})OOCCH{=}CH$ 

Flavors in which used:

Loganberry, floral, rose, fruit, grape, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.57
Ice cream, ices	0.59
Candy	2
Baked goods	2.1

LINALYL FORMATE

Formic acid, Linalyl ester

Chemical formula: $(C_{10}H_{17})OOCH$

Flavors in which used:

Berry, apple, apricot, peach, pineapple

Natural food occurrence:

Oil of lavandin

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	12
Candy	3.8
Baked goods	13

LINALYL HEXANOATE

Hexanoic acid, Linalyl ester

Chemical formula: $(C_{10}H_{17})OOC(CH_2)_4CH_3$

Flavors in which used:

Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.2
Ice cream, ices	6
Candy	11
Baked goods	15

LINALYL OCTANOATE

Octanoic acid, Linalyl ester

Chemical formula: $(C_{10}H_{17})OOC(CH_2)_6CH_3$

Flavors in which used:

Citrus, rose, apple, pineapple, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	0.50, 3
Candy	0.50
Baked goods	0.60, 15

LINALYL PROPIONATE

Propionic acid, Linalyl ester

Chemical formula: $(C_{10}H_{17})OOCCH_2CH_3$

Flavors in which used:

Currant, orange, banana, pear, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.9
Ice cream, ices	3.6
Candy	5.3
Baked goods	12
Gelatin desserts	4.4

LINALYL ISOVALERATE

Isovaleric acid, Linalyl ester

Chemical formula: $(C_{10}H_{17})OOCCH_2CH(CH_3)_2$

Flavors in which used:

Loganberry, apple, apricot, peach, pear, plum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.96
Ice cream, ices	0.91
Candy	5.7
Baked goods	5.6
Gelatin desserts	0.10

1-MALIC ACID

Chemical formula: $HOOCCHOHCH_2COOH$

Flavors in which used:
Fruit, maple

Natural food occurrence:
Coffee, peaches, rhubarb root, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	380
Ice cream, ices	390
Candy	420
Baked goods	0.60, 1.5

MALTOL
3-Hydroxy-2-methyl-γ-pyrone

Chemical formula:

Flavors in which used:
Chocolate, coffee, fruit, maple, nut, vanilla

Natural food occurrence:
Chicory, roasted malt

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.1
Ice cream, ices	8.7
Candy	31
Baked goods	30
Gelatin desserts	7.5
Chewing gum	90
Jelly	15

MELONAL
(See 2,6-Dimethyl-5-heptenal)

p-MENTHA-1,5-DIENE
(See α-Phellandrene)

d-p-MENTHA-1,8-DIENE
(See d-Limonene)

p-MENTHA-1,8-DIEN-7-OL
1,8-p-Menthadien-7-ol

Chemical formula:

Flavors in which used:
Citrus, fruit, mint, vanilla

Natural food occurrence:
Caraway

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50, 1
Ice cream, ices	0.50, 1
Candy	20
Baked goods	10, 50

p-MENTHA-6,8-DIEN-2-OL
(See Carveol)

6,8(9)-p-MENTHADIEN-2-ONE
(See Carvone)

3-p-MENTHANOL
(See Menthol)

p-MENTHAN-3-ONE
(See Menthone)

p-MENTH-1,4(8)-DIENE
(See Terpinolene)

p-MENTH-1-EN-8-OL
(See α-Terpineol)

p-MENTH-8-EN-3-OL
(See Isopulegol)

1-p-MENTHEN-4-OL
(4-Carvomenthenol)

8-p-MENTHEN-2-OL
(See Dihydrocarveol)

Δ-4(8)-p-MENTHEN-3-ONE
(See Pulegone)

Δ-8(9)-p-MENTHEN-3-ONE
(See Isopulegone)

p-MENTH-1-EN-3-ONE
(See d-Piperitone)

p-MENTH-4(8)-EN-3-ONE
(See Pulegone)

p-MENTH-8-EN-3-ONE
(See Isopulegone)

p-MENTH-1-EN-8-YL ACETATE
(See Terpinyl acetate)

p-MENTH-1-EN-8-YL ANTHRANILATE
(See Terpinyl anthranilate)

p-MENTH-1-EN-8-YL BUTYRATE
(See Terpinyl butyrate)

p-MENTH-1-EN-8-YL ISOBUTYRATE
(See Terpinyl isobutyrate)

p-MENTH-1-EN-8-YL CINNAMATE
(See Terpinyl cinnamate)

p-MENTH-1-EN-8-YL FORMATE
(See Terpinyl formate)

p-MENTH-1-EN-8-YL PROPIONATE
(See Terpinyl propionate)

p-MENTH-1-EN-8-YL ISOVALERATE
(See Terpinyl isovalerate)

MENTHOL

Chemical formula:

Flavors in which used:
Butter, caramel, fruit, peppermint, spearmint

Natural food occurrence:
Raspberries, peppermint and other mints, betel

Foods in which used:	Approx. Avg Maximum ppm
Beverages	35
Ice cream, ices	68
Candy	400
Baked goods	130
Chewing gum	1,100

l-MENTHOL
(See Menthol)

(d)-neo-MENTHOL

Chemical formula: $CH_2CH(CH_3)_2$

Flavors in which used:
Mint

Natural food occurrence:
Japanese mint oil (Mentha arvensis)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	10
Ice cream, ices	31
Candy	50
Baked goods	48

MENTHONE

Chemical formula:

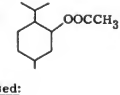
Flavors in which used:
Fruit, mint

Natural food occurrence:
Raspberries, peppermint oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7.7
Ice cream, ices	33
Candy	71
Baked goods	52
Chewing gum	8.7

MENTHYL ACETATE
Acetic acid, Menthyl ester

Chemical formula:



Flavors in which used:
Fruit, mint, spice

MENTHYL ACETATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.5
Ice cream, ices	4.0
Candy	26
Baked goods	24
Chewing gum	5.2

p-MENTH-3-YL ACETATE
(See Menthyl acetate)

MENTHYL ISOVALERATE
(Isovaleric acid, Menthyl ester)

Chemical formula: 

Flavors in which used:
Fruit, liquor, mint

Natural food occurrence:
Peppermint oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5
Ice cream, ices	2.9
Candy	7.4
Baked goods	18

p-MENTH-3-YL ISOVALERATE
(See Menthyl isovalerate)

METHANETHIOL
(See Methyl mercaptan)

METHIONAL
(See 2-Methylthiopropionaldehyde)

β-METHIOPROPIONALDEHYDE
(See 2-Methylthiopropionaldehyde)

p-METHOXYACETAPHENONE
(See Acetanisole)

4'-METHOXYACETOPHENONE
(See Acetanisole)

p-METHOXYALLYLBENZENE
(See Estragole)

o-METHOXYBENZALDEHYDE

Chemical formula: 

Flavors in which used:
Spice, cinnamon

Natural food occurrence:
Cassia oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	20
Baked goods	20
Chewing gum	30

p-METHOXYBENZALDEHYDE
Anisaldehyde

Chemical formula: 

Flavors in which used:
Raspberry, strawberry, butter, caramel, chocolate, apricot, cherry, peach, licorice, anise, nut, black walnut, walnut, spice, vanilla

Natural food occurrence:
Hawthorn, fennel, oil of anise, star anise, Tahiti vanilla beans

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6.3
Ice cream, ices	5.6
Candy	14
Baked goods	16
Gelatin desserts	0.50, 30
Chewing gum	18, 76

METHOXYBENZENE
(See Anisole)

p-METHOXYBENZYL ACETATE
(See Anisyl acetate)

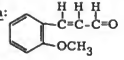
p-METHOXYBENZYL ALCOHOL
(See Anisyl alcohol)

p-METHOXYBENZYL BUTYRATE
(See Anisyl butyrate)

p-METHOXYBENZYL FORMATE
(See Anisyl formate)

p-METHOXYBENZYL PROPIONATE
(See Anisyl propionate)

o-METHOXYCINNAMIC ALDEHYDE

Chemical formula: 

Flavors in which used:
Apple, cinnamon

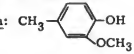
Natural food occurrence:
Cassia oil

Foods in which used:	Approx. Avg Maximum ppm
Candy	100
Baked goods	200
Beverages	30

2-METHOXY-p-CRESOL
(See 2-Methoxy-4-methylphenol)

o-METHOXY METHYL BENZOATE
(See Methyl o-methoxybenzoate)

2-METHOXY-4-METHYLPHENOL

Chemical formula: 

Flavors in which used:
Fruit, rum, nut, clove

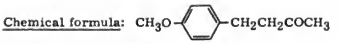
Natural food occurrence:
Cassie (absolute)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	10, 21
Ice cream, ices	0.05
Candy	0.77
Baked goods	1
Liqueurs	0.02

o-METHOXYPHENOL
(See Guaiacol)

p-METHOXYPHENYL ACETONE
(See 1-(p-Methoxyphenyl)-2-propanone)

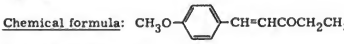
4-(p-METHOXYPHENYL)-2-BUTANONE

Chemical formula: 

Flavors in which used:
Fruit, licorice, anise

Foods in which used:	Approx. Avg Maximum ppm
Beverages	12
Ice cream, ices	10, 12
Candy	28
Baked goods	26
Gelatin desserts	25

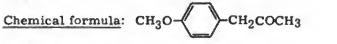
1-(p-METHOXYPHENYL)-1-PENTEN-3-ONE
α-Methyl anisylidene acetone
Ethone

Chemical formula: 

Flavors in which used:
Butter, cream, fruit, maple, nut, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.3
Ice cream, ices	2.3
Candy	28
Baked goods	12

1-(p-METHOXYPHENYL)-2-PROPANONE

Chemical formula: 

Flavors in which used:
Fruit, vanilla

Natural food occurrence:
Star anise

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.60, 2.8
Ice cream, ices	1.2, 2.8
Candy	4.4, 6
Baked goods	4.4, 6

1-METHOXY-4-PROPENYLBENZENE
(See Anethole)

2-METHOXY-4-PROPENYLPHENOL
(See Isoeugenol)

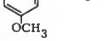
2-METHOXY-4-PROPENYLPHENYL ACETATE
(See Isoeugenyl acetate)

2-METHOXY-4-PROPENYLPHENYL FORMATE
(See Isoeugenyl formate)

2-METHOXY-4-PROPENYLPHENYL PHENYLACETATE
(See Isoeugenyl phenylacetate)

p-METHOXYSTYRYL ISOPROPYL KETONE
1-(p-Methoxy phenyl)-4-methyl-1-penten-3-one

Chemical formula:



Flavors in which used:
Berry

Foods in which used:	Approx. Avg Maximum ppm
Beverages	16
Ice cream, ices	34
Candy	44
Baked goods	34
Gelatin desserts	5, 50
Chewing gum	40, 320

p-METHOXYTOLUENE
(See p-Methylanisole)

2-METHOXYTOLUENE
(See o-Methylanisole)

4-METHOXYTOLUENE
(See p-Methylanisole)

2-METHOXY-4-VINYLPHENOL

Chemical formula:

Flavors in which used:
Vanilla

Natural food occurrence:
Coffee

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.25, 3
Ice cream, ices	0.25, 11
Candy	1, 8
Baked goods	1, 8

METHYLACETALDEHYDE
(See Propionaldehyde)

METHYL ACETATE
Acetic acid, Methyl ester

Chemical formula: CH_3COOCH_3

Flavors in which used:
Fruit, rum, nut

Natural food occurrence:
Coffee

Foods in which used:	Approx. Avg Maximum ppm
Beverages	28
Ice cream, ices	29
Candy	11
Baked goods	14
Gelatin and puddings	0.10
Liquor	0.20

METHYLACETIC ACID
(See Propionic acid)

p-METHYL ACETOPHENONE
(See 4'-Methyl acetophenone)

4'-METHYL ACETOPHENONE
p-Methyl acetophenone

Chemical formula:

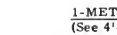
Flavors in which used:
Fruit, almond, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.1
Ice cream, ices	1.6
Candy	5.2
Baked goods	4.9
Maraschino cherries	8
Chewing gum	870
Condiments	5.8

1-METHYL-4-ACETYL BENZENE
(See 4'-Methyl acetophenone)

2-METHYLALLYL BUTYRATE
Butyric acid, 2-Methyl-2-propen-1-yl ester

Chemical formula:



Flavors in which used:
Pineapple

2-METHYLALLYL BUTYRATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.20
Ice cream, ices	--
Candy	--
Baked goods	0.20

METHYL 2-AMINOBENZOATE
(See Methyl anthranilate)

2-METHYLAMINO METHYLBENZOATE
(See Methyl N-methylanthranilate)

METHYLAMYLACETIC ACID
(See 2-Methylheptanoic acid)

METHYL AMYL KETONE
(See 2-Heptanone)

METHYL ANISATE
Anisic acid, Methyl ester

Chemical formula: CH_3O–C$_6$H$_4$–$COOCH_3$

Flavors in which used:
Fruit, melon, liquor, root beer, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.7
Ice cream, ices	3
Candy	8
Baked goods	6.2

o-METHYLANISOLE

Chemical formula: C$_6$H$_4$(CH_3)(OCH_3)

Flavors in which used:
Fruit, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.7
Ice cream, ices	1
Candy	2.3, 4
Baked goods	4

p-METHYLANISOLE

Chemical formula: CH_3–C$_6$H$_4$–OCH_3

Flavors in which used:
Berry, maple, black walnut, walnut, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.7
Ice cream, ices	2.7
Candy	4.8
Baked goods	7.6
Gelatin and puddings	0.50, 4
Condiments	2
Sirups	8

α-METHYL ANISYLIDENE ACETONE
(See 1-(p-Methoxyphenyl)-1-penten-3-one)

METHYL ANTHRANILATE
Anthranilic acid, Methyl ester

Chemical formula: C$_6$H$_4$($COOCH_3$)(NH_2)

Flavors in which used:
Loganberry, strawberry, orange, floral, rose, violet, cherry, grape, melon, liquor, wine, honey

Natural food occurrence:
Grapes, grape juice (concord), jasmine oil, lavender oil, lemon oil, orange flowers, petitgrain oil, petitgrain mandarin oil, peels of macrocarpa bunge, tuberose

Foods in which used:	Approx. Avg Maximum ppm
Beverages	16
Ice cream, ices	21
Candy	56
Baked goods	20
Gelatin desserts	23
Chewing gum	2,200
Liqueurs	0.20

METHYL BENZOATE
Benzoic acid, Methyl ester

Chemical formula: C$_6$H$_5$–$COOCH_3$

Flavors in which used:
Fruit, liquor, rum, nut, spice, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.2
Ice cream, ices	4.5
Candy	8.4
Baked goods	9.9

METHYLBENZYL ACETATE

Tolyl acetate (so-called)

Chemical formula: $CH_2\text{-}O\text{-}\overset{O}{\overset{\|}{C}}\text{-}CH_3$

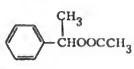
Flavors in which used:
Cherry, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.8
Ice cream, ices	2.6
Candy	11
Baked goods	9, 10
Gelatin desserts	1
Chewing gum	0.30, 220

α-METHYLBENZYL ACETATE

Acetic acid, α-Methylbenzyl ester

Chemical formula:



Flavors in which used:
Berry, fruit

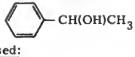
Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.9
Ice cream, ices	5.4
Candy	12
Baked goods	17
Chewing gum	0.80
Toppings	30

p-METHYLBENZYL ACETONE

(See 4-(p-Tolyl)-2-butanone)

α-METHYLBENZYL ALCOHOL

Chemical formula:



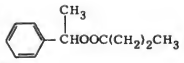
Flavors in which used:
Strawberry, rose, fruit, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.6
Ice cream, ices	3.8
Candy	6.8
Baked goods	9
Gelatin desserts	4
Chewing gum	0.30

α-METHYLBENZYL BUTYRATE

Butyric acid, α-Methylbenzyl ester

Chemical formula:



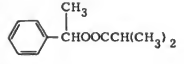
Flavors in which used:
Berry, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4, 5
Ice cream, ices	4, 10
Candy	10, 20
Baked goods	10, 20

α-METHYLBENZYL ISOBUTYRATE

Styralyl isobutyrate
Methyl phenylcarbinyl isobutyrate

Chemical formula:



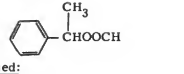
Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	10
Candy	10
Baked goods	10

α-METHYLBENZYL FORMATE

Formic acid, α-Methylbenzyl ester

Chemical formula:



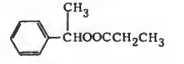
Flavors in which used:
Berry, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2, 5
Ice cream, ices	3, 5
Candy	10, 20
Baked goods	10, 20

α-METHYLBENZYL PROPIONATE

Propionic acid, α-Methylbenzyl ester

Chemical formula:



α-METHYLBENZYL PROPIONATE (cont'd)

Flavors in which used:
Berry, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4, 5
Ice cream, ices	4, 5
Candy	10, 15
Baked goods	10, 15

2-METHYLBUTANAL
(See 2-Methylbutyraldehyde)

3-METHYLBUTANAL
(See 3-Methylbutyraldehyde)

3-METHYL-1-BUTANOL
(See Isoamyl alcohol)

METHYL ISOBUTYLACETATE
(See Methyl 4-methylvalerate)

β-METHYL BUTYL ACETATE
(See Isoamyl acetate)

METHYL ISOBUTYL KETONE
(See 4-Methyl-2-pentanone)

METHYL p-ter-BUTYLPHENYLACETATE
p-ter-Butylphenylacetic acid, Methyl ester

Chemical formula: $(CH_3)_3C$-C$_6$H$_4$-CH_2COOCH_3

Flavors in which used:
Chocolate, fruit, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50
Ice cream, ices	0.35, 1
Candy	2
Baked goods	2

2-METHYLBUTYRALDEHYDE

Chemical formula: $CH_3CH_2CH(CH_3)CHO$

Flavors in which used:
Chocolate, fruit

Natural food occurrence:
Coffee, tea

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.5, 2
Ice cream, ices	2, 8
Candy	6.6
Baked goods	5.7

3-METHYLBUTYRALDEHYDE

Chemical formula: $(CH_3)_2CHCH_2CHO$

Flavors in which used:
Butter, chocolate, cocoa, fruit, nut

Natural food occurrence:
Coffee extract, oil of lavender, peppermint oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.63
Ice cream, ices	1.4
Candy	2.8
Baked goods	3.1
Gelatin desserts	3

METHYL BUTYRATE
Butyric acid, Methyl ester

Chemical formula: $CH_3(CH_2)_2COOCH_3$

Flavors in which used:
Fruit

Natural food occurrence:
Apples

Foods in which used:	Approx. Avg Maximum ppm
Beverages	17
Ice cream, ices	31
Candy	86
Baked goods	48, 200

METHYL ISOBUTYRATE
Isobutyric acid, Methyl ester

Chemical formula: $(CH_3)_2CHCOOCH_3$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	22
Ice cream, ices	38
Candy	48, 200
Baked goods	48, 200

β-METHYLBUTYRIC ACID
(See Isovaleric acid)

2-METHYLBUTYRIC ACID

Chemical formula: $CH_3CH_2CHCOOH$
CH_3

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50
Ice cream, ices	3
Candy	5

3-METHYLBUTYROLACTONE
(See γ-Valeractone)

METHYL ISOCAPROATE
(See Methyl 4-methylvalerate)

METHYLCATECHOL
(See Guaiacol)

METHYL CHAVICOL
(See Estragole)

α-METHYLCINNAMALDEHYDE

Chemical formula:  $CH=C(CH_3)CHO$

Flavors in which used:
Fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50, 11
Ice cream, ices	1, 15
Candy	26
Baked goods	27
Chewing gum	430

METHYL CINNAMATE
Cinnamic acid, Methyl ester

Chemical formula:  $CH=CHCOOCH_3$

Flavors in which used:
Strawberry, butter, cream, cherry, grape, peach, plum, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.9
Ice cream, ices	3.8
Candy	8.7
Baked goods	13
Gelatin desserts	14 1.7
Chewing gum	2.7, 40
Condiments	0.40

6-METHYLCOUMARIN

Chemical formula: CH_3 

Flavors in which used:
Butter, caramel, coconut, fruit, nut, root beer, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.2
Ice cream, ices	4.8
Candy	21
Baked goods	24
Gelatins and puddings	39
Chewing gum	0.80, 15

3-METHYLCYCLOPENTANE-1,2-DIONE
(See Methylcyclopentenolone)

METHYLCYCLOPENTENOLONE
3-Methylcyclopentane-1,2-dione

Chemical formula: 

Flavors in which used:
Berry, butter, butterscotch, caramel, maple, hazelnut, pecan, walnut, fruit, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	11
Ice cream, ices	5.6
Candy	18
Baked goods	13
Gelatins and puddings	14
Chewing gum	15, 8
Sirups	10, 30

METHYL DECYNE CARBONATE
(See Methyl 2-undecynoate)

METHYL DISULFIDE
Dimethyl disulfide

Chemical formula: $CH_3\text{-}S\text{-}S\text{-}CH_3$

METHYL DISULFIDE (cont'd)

Flavors in which used:
Onion

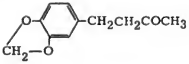
Foods in which used:	Approx. Avg Maximum ppm
Baked goods	1.2
Condiments	3
Pickle products	2.5

METHYL DODECANOATE
(See Methyl laurate)

3,4-METHYLENEDIOXYBENZALDEHYDE
(See Piperonal)

4-(3,4-METHYLENEDIOXYPHENYL)-2-BUTANONE
Piperonyl acetone

Chemical formula:



Flavors in which used:
Fruit, cherry

Foods in which used:	Approx. Avg Maximum ppm
Beverages	8.2
Ice cream, ices	45
Candy	40
Baked goods	40

METHYL ETHYL ACETALDEHYDE
(See 2-Methylbutyraldehyde)

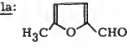
METHYL ETHYL KETONE
(See 2-Butanone)

METHYL EUGENOL
(See Eugenyl methyl ether)

METHYL ISOEUGENYL
(See Isoeugenyl methyl ether)

5-METHYLFURFURAL

Chemical formula:

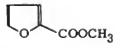


Flavors in which used:
Honey, maple, meat

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.13
Ice cream, ices	0.13
Candy	0.03, 0.13
Baked goods	0.03

METHYL 2-FUROATE
Furoic acid, Methyl ester

Chemical formula:



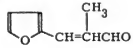
Flavors in which used:
Meat

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.61
Ice cream, ices	0.06, 1.3
Candy	0.66
Condiments	1, 1.3

α-METHYL FURYLACROLEIN
(See 2-Methyl-3-furylacrolein)

2-METHYL-3-FURYLACROLEIN

Chemical formula:



Flavors in which used:
Chocolate, fruit, nut, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.60
Ice cream, ices	0.65
Candy	0.68
Baked goods	0.92

4-METHYLGUAIACOL
(See 2-Methoxy-4-methylphenol)

2-METHYLHENDECANAL
(See 2-Methylundecanal)

METHYL HEPTANOATE
Heptanoic acid, Methyl ester

Chemical formula: $CH_3(CH_2)_5COOCH_3$

METHYL HEPTANOATE (cont'd)

Flavors in which used:
Berry, grape, peach, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.80
Ice cream, ices	0.83
Candy	0.33
Baked goods	0.50, 0.60

2-METHYLHEPTANOIC ACID

Chemical formula: $CH_3(CH_2)_4CH(CH_3)COOH$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	10
Candy	10
Baked goods	10

6-METHYL-5-HEPTEN-2-ONE

Chemical formula: $(CH_3)_2C{=}CH(CH_2)_2COCH_3$

Flavors in which used:
Berry, citrus, banana, melon, peach, pear, pineapple

Natural food occurrence:
Oil of lavender, oil of lemon

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.1
Ice cream, ices	1.1
Candy	1.1
Baked goods	1.3
Gelatin desserts	1.3

METHYL HEPTINE CARBONATE
(See Methyl 2-octynoate)

METHYL HEPTYL KETONE
(See 2-Nonanone)

METHYL HEXANOATE
Hexanoic acid, Methyl ester

Chemical formula: $CH_3(CH_2)_4COOCH_3$

Flavors in which used:
Pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.1
Ice cream, ices	8.5
Candy	5.3
Baked goods	20

METHYL 2-HEXENOATE
2-Hexenoic acid, Methyl ester

Chemical formula: $CH_3CH_2CH_2CH{=}CHCOOCH_3$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.03, 0.12
Candy	0.03

METHYL HEXYL ACETALDEHYDE
(See 2-Methyloctanal)

METHYL HEXYL CARBINOL
(See 2-Octanol)

METHYL HEXYL KETONE
(See 2-Octanone)

p-METHYLHYDRATROPALDEHYDE
(See 2-(p-Tolyl) propionaldehyde)

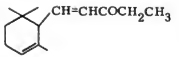
METHYL HYDROCINNAMATE
(See Methyl 3-phenylpropionate)

β-METHYLINDOLE
(See Skatole)

3-METHYLINDOLE
(See Skatole)

METHYL-α-IONONE
5-(2,6,6-Trimethyl-2-cyclohexen-1-yl)-4-penten-3-one
Raldeine
α-Cetone

Chemical formula:

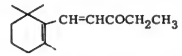


Flavors in which used:
Berry, floral, violet, fruit

METHYL-α-IONONE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.7
Ice cream, ices	2.4
Candy	6.6
Baked goods	6.5
Chewing gum	0.60
Jellies	0.21

METHYL-β-IONONE
5-(2,6,6-Trimethyl-1-cyclohexen-1-yl)-4-penten-3-one
Raldeine
β-Cetone

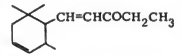
Chemical formula: 

Flavors in which used:
Berry, raspberry, strawberry, citrus, orange, floral, violet, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	2.2
Candy	7.5
Baked goods	5.9

METHYL-γ-IONONE (so-called)
(See α-Isomethylionone)

METHYL-δ-IONONE
5-(2,6,6-Trimethyl-3-cyclohexen-1-yl)-4-penten-3-one

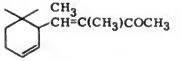
Chemical formula: 

Flavors in which used:
Berry, floral, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.61
Ice cream, ices	0.89
Candy	3.2
Baked goods	2.8

6-METHYLIONONE
(See α-Irone)

α-ISOMETHYLIONONE
4-(2,6,6-Trimethyl-2-cyclohexen-1-yl)-3-methyl-3-buten-2-one
Methyl-γ-ionone (so-called)

Chemical formula: 

Flavors in which used:
Berry, loganberry, raspberry, strawberry, floral, violet, fruit, pineapple, liquor, muscatel, nut, pistachio

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.97
Ice cream, ices	0.98
Candy	4.9
Baked goods	4.3
Gelatin desserts	0.05
Chewing gum	0.80

METHYL LAURATE
Dodecanoic acid, Methyl ester

Chemical formula: $CH_3(CH_2)_{10}COOCH_3$

Flavors in which used:
Floral

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50, 5
Ice cream, ices	0.50, 5
Candy	0.02, 0.5
Baked goods	1

METHYL MERCAPTAN
Methanethiol

Chemical formula: CH_3SH

Flavors in which used:
Coffee

Natural food occurrence:
Caseinate (Na sol), cheese, cruciferae, milk (skim), coffee, cooked beef

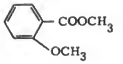
Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.56
Ice cream, ices	0.13, 1
Candy	0.13, 1
Baked goods	0.15, 1

METHYLMERCAPTOPROPIONALDEHYDE
(See 2-Methylthiopropionaldehyde)

METHYL β-METHIOPROPIONATE
(See Methyl 2-methylthiopropionate)

METHYL o-METHOXYBENZOATE

o-Methoxy methyl benzoate

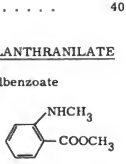
Chemical formula: 

Flavors in which used:
Berry

Foods in which used:	Approx. Avg Maximum ppm
Beverages	12
Ice cream, ices	9
Candy	30
Baked goods	40

METHYL N-METHYLANTHRANILATE

Dimethylanthranilate
2-Methylamino methylbenzoate

Chemical formula: 

Flavors in which used:
Citrus, fruit

Natural food occurrence:
Mandarin-leaves oil, mandarin oil, petitgrain oil, rue oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.1
Ice cream, ices	5
Candy	18
Baked goods	17
Jellies	4
Chewing gum	7,000

METHYL 2-METHYLBUTYRATE

Chemical formula: $CH_3CH_2\underset{\displaystyle CH_3}{\underset{|}{C}}HCOOCH_3$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5
Ice cream, ices	10
Candy	10
Baked goods	10

7-METHYL-3-METHYLENE-1,6-OCTADIENE

(See Myrcene)

METHYL β-METHYL MERCAPTOPROPIONATE

(See Methyl 2-methylthiopropionate)

METHYL 4-METHYLPENTANOATE

(See Methyl 4-methylvalerate)

METHYL 2-METHYLTHIOPROPIONATE

β-Methiopropionic acid, Methyl ester

Chemical formula: $CH_3SCH_2CH_2COOCH_3$

Flavors in which used:
Fruit, meat

Natural food occurrence:
Pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.35
Ice cream, ices	0.37
Candy	0.74
Baked goods	1
Sirups	0.05

METHYL 4-METHYLVALERATE

4-Methylpentanoic acid, Methyl ester

Chemical formula: $(CH_3)_2CH(CH_2)_2COOCH_3$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	11
Ice cream, ices	44
Candy	33
Baked goods	33

METHYL MYRISTATE

Tetradecanoic acid, Methyl ester

Chemical formula: $CH_3(CH_2)_{12}COOCH_3$

Flavors in which used:
Fruit, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.25, 0.50
Ice cream, ices	0.25, 0.50
Candy	2.4
Baked goods	0.30, 2
Gelatin desserts	0.24

METHYL β-NAPHTHYL KETONE
2'-Acetonaphthone
Oranger crystals
Cetone D

Chemical formula:

Flavors in which used:
Berry, strawberry, citrus, fruit, grape, neroli, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50
Ice cream, ices	0.75
Candy	5.3
Baked goods	2
Gelatin desserts	2.2, 3
Chewing gum	480, 700

METHYL NONANOATE
Nonanoic acid, Methyl ester

Chemical formula: $CH_3(CH_2)_7COOCH_3$

Flavors in which used:
Berry, citrus, pineapple, honey, cognac

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.9
Ice cream, ices	3.6
Candy	6.2
Baked goods	7.1

METHYL 2-NONENOATE
2-Nonenoic acid, Methyl ester

Chemical formula: $CH_3(CH_2)_5CH{=}CHCOOCH_3$

Flavors in which used:
Berry, melon

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.2
Ice cream, ices	12
Candy	9.9
Baked goods	13

METHYL NONYL ACETALDEHYDE
(See 2-Methylundecanal)

METHYL NONYL KETONE
(See 2-Undecanone)

METHYL 2-NONYNOATE
Methyl octyne carbonate

Chemical formula: $CH_3(CH_2)C_5{\equiv}CCOOCH_3$

Flavors in which used:
Berry, floral, violet, fruit, banana, melon, peach

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.69
Ice cream, ices	0.28
Candy	0.61
Baked goods	2.2
Gelatin desserts	0.02, 0.12
Condiments	10

2-METHYLOCTANAL

Chemical formula: $CH_3(CH_2)_5CH(CH_3)CHO$

Flavors in which used:
Citrus

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	1
Candy	2
Baked goods	2

METHYL OCTANOATE
Octanoic acid, Methyl ester

Chemical formula: $CH_3(CH_2)_6COOCH_3$

Flavors in which used:
Berry, pineapple

Natural food occurrence:
Pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.20, 1
Ice cream, ices	1, 10
Candy	13
Baked goods	1, 40

METHYL OCTYNE CARBONATE
(See Methyl 2-nonynoate)

METHYL 2-OCTYNOATE
Methyl heptine carbonate

Chemical formula: $CH_3(CH_2)_4C{\equiv}CCOOCH_3$

METHYL 2-OCTYNOATE (cont'd)

Flavors in which used:
Berry, raspberry, strawberry, floral, violet, fruit, peach, liquor, muscatel

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.15
Ice cream, ices	0.30
Candy	1.4
Baked goods	1.4
Gelatin desserts	1.7
Chewing gum	13, 20
Jellies	0.23

2-METHYLOENANTHIC ACID
(See 2-Methylheptanoic acid)

METHYLOL METHYL AMYL KETONE
(See 3-Octanon-1-ol)

METHYLOL METHYL HEXYL KETONE ACETATE
(See 3-Nonanon-1-yl acetate)

4-METHYL-2,3-PENTANEDIONE

Chemical formula: $CH_3COCOCH(CH_3)_2$

Flavors in which used:
Strawberry, butter, butterscotch, banana, rum, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7.6
Ice cream, ices	5.6
Candy	6.2
Baked goods	8.3
Gelatins and puddings	1.2, 18

2-METHYLPENTANOIC ACID
(See 2-Methylvaleric acid)

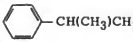
4-METHYL-2-PENTANONE

Chemical formula: $CH_3COCH_2CH(CH_3)_2$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6.3
Ice cream, ices	6.3
Candy	6.3
Baked goods	6.3

β-METHYLPHENETHYL ALCOHOL
2-Phenyl-1-propanol

Chemical formula: 

Flavors in which used:
Berry, rose, melon, honey

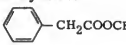
Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.1
Ice cream, ices	0.42
Candy	1.2
Baked goods	0.92

β-METHYLPHENETHYL BUTYRATE
(See 2-Phenylpropyl butyrate)

α-METHYL PHENYLACETALDEHYDE
(See 2-Phenylpropionaldehyde)

p-METHYLPHENYLACETALDEHYDE
(See p-Tolylacetaldehyde)

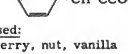
METHYL PHENYLACETATE
Phenylacetic acid, Methyl ester

Chemical formula: 

Flavors in which used:
Strawberry, chocolate, peach, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.9
Ice cream, ices	2.5
Baked goods	12
Candy	13
Gelatin dessert	0.10
Chewing gum	11
Sirup	37

3-METHYL-4-PHENYL-3-BUTENE-2-ONE
Benzylidene acetone methyl

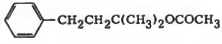
Chemical formula: 

Flavors in which used:
Berry, fruit, cherry, nut, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.59
Ice cream, ices	2
Candy	2.8
Baked goods	2

2-METHYL-4-PHENYL-2-BUTYL ACETATE

Acetic acid, 2-Methyl-4-phenyl-2-butyl ester

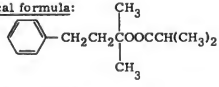
Chemical formula: 

Flavors in which used:
Fruit, tea

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.8
Ice cream, ices	0.50
Candy	10, 0.50
Baked goods	10, 0.50

2-METHYL-4-PHENYL-2-BUTYL ISOBUTYRATE

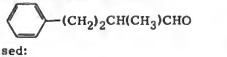
Isobutyric acid, 2-Methyl-4-phenyl-2-butyl ester

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50, 11
Ice cream, ices	1, 44
Candy	11
Baked goods	2, 30

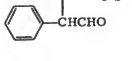
2-METHYL-4-PHENYLBUTYRALDEHYDE

Chemical formula: 

Flavors in which used:
Nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.02
Ice cream, ices	0.50
Candy	0.50
Baked goods	0.50

3-METHYL-2-PHENYLBUTYRALDEHYDE

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.10
Ice cream, ices	0.50
Candy	0.32, 0.50

METHYL 4-PHENYLBUTYRATE

4-Phenylbutyric acid, Methyl ester

Chemical formula: 

Flavors in which used:
Strawberry, fruit, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.56
Ice cream, ices	0.52
Candy	1.6
Baked goods	1.4

METHYL PHENYLCARBINOL

(See α-Methylbenzyl alcohol)

METHYL PHENYLCARBINYL ACETATE

(See α-Methylbenzyl acetate)

METHYL PHENYLCARBINYL BUTYRATE

(See α-Methylbenzyl butyrate)

METHYL PHENYLCARBINYL ISOBUTYRATE

(See α-Methylbenzyl isobutyrate)

METHYL PHENYLCARBINYL FORMATE

(See α-Methylbenzyl formate)

METHYL PHENYLCARBINYL PROPIONATE

(See α-Methylbenzyl propionate)

4-METHYL-2-PHENYL-m-DIOXOLANE

(See Benzaldehyde propylene glycol acetal)

METHYLPHENYL ETHER

(See Anisole)

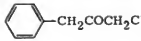
METHYL PHENYL KETONE

(See Acetophenone)

4-METHYL-1-PHENYL-2-PENTANOL

(See α-Isobutylphenethyl alcohol)

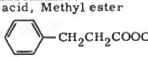
4-METHYL-1-PHENYL-2-PENTANONE

Chemical formula: 

Flavors in which used:
Berry, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	5
Candy	0.06, 5
Baked goods	5

METHYL 3-PHENYLPROPIONATE
3-Phenylpropionic acid, Methyl ester

Chemical formula: 

Flavors in which used:
Rose, apricot, peach, pineapple, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.46
Ice cream, ices	0.56
Candy	1.7
Baked goods	0.70, 4

2-METHYL PROPANAL
(See Isobutyraldehyde)

2-METHYL PROPANOIC ACID
(See Isobutyric acid)

2-METHYL-2-PROPEN-1-YL BUTYRATE
(See 2-Methylallyl butyrate)

6-METHYL-3-ISOPROPENYL-CYCLOHEXANOL
(See Dihydrocarveol)

1-METHYL-4-ISOPROPENYL-3-CYCLO-HEXANONE
(See Isopulegone)

METHYL PROPIONATE
Propionic acid, Methyl ester

Chemical formula: $CH_3CH_2COOCH_3$

Flavors in which used:
Fruit, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	20
Ice cream, ices	29
Candy	96
Baked goods	130

2-METHYL-5-ISOPROPYL-1,3-CYCLOHEXADIENE
(See α-Phellandrene)

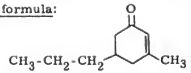
5-METHYL-2-ISOPROPYL-CYCLOHEXANOL
(See Menthol)

1-METHYL-4-ISOPROPYL-1-CYCLOHEXENE-4-OL
(See 4-Carvomenthenol)

1-METHYL-4-ISOPROPYL-1-CYCLOHEXEN-3-ONE
(See d-Piperitone)

3-METHYL-5-PROPYL-CYCLOHEX-2-ENONE
Celery ketone

Chemical formula:



Flavors in which used:
Celery, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.8
Ice cream, ices	0.25
Candy	4.7
Baked goods	0.25

5-METHYL-2-ISOPROPYL HEXAHYDROPHENOL
(See Menthol)

α-METHYL-p-ISOPROPYL HYDROCINNAMALDEHYDE
(See 2-Methyl-3-(p-isopropylphenyl) propionaldehyde)

1-METHYL-4-ISOPROPYLIDENE-3-CYCLO-HEXANONE
(See Pulegone)

METHYL PROPYL KETONE
(See 2-Pentanone)

2-METHYL-5-ISOPROPYLPHENOL
(See Carvacrol)

5-METHYL-2-ISOPROPYLPHENOL
(See Thymol)

2-METHYL-3-(p-ISOPROPYLPHENYL) PROPIONALDEHYDE
2-Methyl-3-(p-isopropylphenyl) butanal

Chemical formula: $(CH_3)_2CH$-C$_6$H$_4$-$CH_2CH(CH_3)CHO$

Flavors in which used:
Citrus, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.30
Ice cream, ices	0.45
Candy	0.99
Baked goods	1.2

α-METHYL p-ISOPROPYL PHENYLPROPYL ALDEHYDE
(See 2-Methyl-3-(p-isopropylphenyl) propionaldehyde)

METHYLPROTOCATECHUIC ALDEHYDE
(See Vanillin)

METHYL PYROMUCATE
(See Methyl 2-furoate)

4-METHYLQUINOLINE
p-Methylquinoline
Lepidine

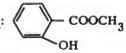
Chemical formula:

Flavors in which used:
Butter, caramel, fruit, honey, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.22
Ice cream, ices	1.4
Candy	1.8
Baked goods	1.8

METHYL SALICYLATE
Salicylic acid, Methyl ester

Chemical formula:



Flavors in which used:
Strawberry, grape, mint, walnut, root beer, sarsaparilla, spice, wintergreen, birch beer, vanilla

Natural food occurrence:
Birch sweet, cassie (absolute), wintergreen

Foods in which used:	Approx. Avg Maximum ppm
Beverages	59
Ice cream, ices	27
Candy	840
Baked goods	54
Chewing gum	8,400
Sirup	200

METHYL STYRYL CARBINOL
(See 4-Phenyl-3-buten-2-ol)

METHYL STYRYL KETONE
(See 4-Phenyl-3-buten-2-one)

METHYL SULFIDE
Dimethyl sulfide

Chemical formula: $(CH_3)_2S$

Flavors in which used:
Chocolate, cocoa, coffee, fruit, molasses

Natural food occurrence:
Caseinate (Na sols), cheese, coffee, coffee extract, milk (skim)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.1
Ice cream, ices	0.30
Candy	1.4
Baked goods	1.6
Gelatin desserts	0.13
Sirups	0.50

METHYL TETRADECANOATE
(See Methyl myristate)

METHYLTHEOBROMINE
(See Caffeine)

2-METHYLTHIOPROPIONALDEHYDE
β-Methiopropionaldehyde

Chemical formula: $CH_3SCH_2CH_2CHO$

Flavors in which used:
Fruit, meat, cheese

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.35
Ice cream, ices	0.01, 1
Candy	0.01, 1
Baked goods	0.66
Condiments	0.62
Meats	1.9

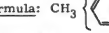
α-METHYL TOLUALDEHYDE
(See 2-Phenylpropionaldehyde)

METHYL α-TOLUATE
(See Methyl phenylacetate)

METHYL o-TOLYL ETHER
(See o-Methylanisole)

METHYL p-TOLYL KETONE
(See 4'-Methyl acetophenone)

2-METHYL-3-TOLYL PROPIONALDEHYDE
(Mixed o-, m-, p-)

Chemical formula: CH_3  $CH_2CH(CH_3)CHO$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.05
Ice cream, ices	1
Candy	1
Baked goods	1

2-METHYLUNDECANAL
Methyl nonyl acetaldehyde
2-Methylhendecanal
Aldehyde C-12 MNA

Chemical formula: $CH_3(CH_2)_8CH(CH_3)CHO$

Flavors in which used:
Citrus, lime, orange, tangerine, coconut, fruit, apricot, pineapple, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.31
Ice cream, ices	0.11
Candy	0.94
Baked goods	1.3
Gelatins and puddings	0.50, 2.5
Chewing gum	0.20
Jellies	0.33

METHYL 9-UNDECENOATE
9-Undecylenic acid, Methyl ester

Chemical formula: $CH_3CH{=}CH(CH_2)_7COOCH_3$

Flavors in which used:
Citrus, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.7
Ice cream, ices	6.7
Candy	22
Baked goods	22

METHYL 2-UNDECYNOATE
Methyl decyne carbonate

Chemical formula: $CH_3(CH_2)_7C{\equiv}CCOOCH_3$

Flavors in which used:
Floral, violet

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.10, 5
Ice cream, ices	20
Candy	15
Baked goods	15

METHYL VALERATE
Valeric acid, Methyl ester

Chemical formula: $CH_3(CH_2)_3COOCH_3$

Flavors in which used:
Fruit

Natural food occurrence:
Pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	9.1
Ice cream, ices	25
Candy	28
Baked goods	39

METHYL ISOVALERATE
Isovaleric acid, Methyl ester

Chemical formula: $(CH_3)_2CHCH_2COOCH_3$

METHYL ISOVALERATE (cont'd)

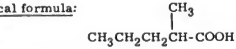
Flavors in which used:
Fruit

Natural food occurrence:
Pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	9.3
Ice cream, ices	26
Candy	26
Baked goods	30
Chewing gum	35

METHYLVALERIC ACID
2-Methylpentanoic acid

Chemical formula:

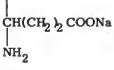


Flavors in which used:
Chocolate

Foods in which used:	Approx. Avg Maximum ppm
Candy	0.80

MONOSODIUM GLUTAMATE

Chemical formula:



Flavors in which used:
Meat, spice

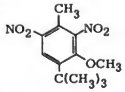
Natural food occurrence:
Soybean, sugar beets

Foods in which used:	Approx. Avg Maximum ppm
Candy	1.3
Baked goods	61
Condiments	1,900
Meats	2,900
Pickles	130
Soups	4,300

MORELLONE
(See 3-Benzyl-4-heptanone)

MUSK AMBRETTE
2,6-Dinitro-3-methoxy-1-methyl-4-tert-butylbenzene

Chemical formula:

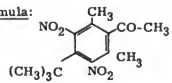


Flavors in which used:
Fruit, cherry, maple, mint, nut, black walnut, pecan, spice, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.43
Ice cream, ices	0.26
Candy	4.8
Baked goods	0.41
Gelatins and puddings	0.01
Chewing gum	9

MUSK KETONE
4,6-Dinitro-1,3-dimethyl-5-tert-butyl-2-acetylbenzene

Chemical formula:



Foods in which used:	Approx. Avg Maximum ppm
Chewing gum	45
Candy	22

MUSTARD OIL
(See Allyl isothiocyanate)

MYRCENE

Chemical formula:

Flavors in which used:
Fruit, root beer, coriander

Natural food occurrence:
Galbanum oil, pimenta oil, orange peel (sweet oil), palma rosa oil, hop oil, bay oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.4
Ice cream, ices	6.4
Candy	0.50, 13
Baked goods	4.9

MYRISTALDEHYDE
Tetradecanal

Chemical formula: $CH_3(CH_2)_{12}CHO$

Flavors in which used:
Citrus, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.7
Ice cream, ices	0.06, 8
Candy	1.9
Baked goods	0.08, 24
Gelatin desserts	0.15

MYRISTIC ACID
Tetradecanoic acid

Chemical formula: $CH_3(CH_2)_{12}COOH$

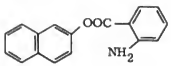
Flavors in which used:
Butter, butterscotch, chocolate, cocoa, fruit

Natural food occurrence:
Butter acids, oil of lovage, mace oil, cire d'abeille (absolute)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.3
Ice cream, ices	2.6, 10
Candy	4.1
Baked goods	5.3
Gelatin desserts	0.10

β-NAPHTHYL ANTHRANILATE
2-Naphthyl anthranilate

Chemical formula:



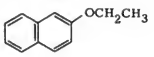
Flavors in which used:
Fruit, grape

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.3
Ice cream, ices	1.1
Candy	16
Baked goods	19

2-NAPHTHYL ANTHRANILATE
(See β-Naphthyl anthranilate)

β-NAPHTHYL ETHYL ETHER
2-Ethoxynaphthalene
Nerolin
Ethyl 2-naphthyl ether
Neroline

Chemical formula:

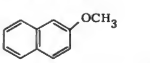


Flavors in which used:
Berry, fruit, honey, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.65
Ice cream, ices	0.74
Candy	2.8
Baked goods	3.6
Gelatin desserts	0.12

β-NAPHTHYL METHYL ETHER
2-Methoxynaphthalene, Yara yara

Chemical formula:

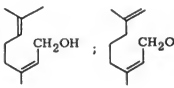


Foods in which used:	Approx. Avg Maximum ppm
Chewing gum	11

NEOFOLIONE
(See Methyl 2-nonenoate)

NEROL

Chemical formula:



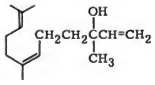
Flavors in which used:
Citrus, neroli, honey

Natural food occurrence:
Oil of lavender, orange leaf (absolute), palma rosa oil, rose, neroli, oil of petitgrain

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.4
Ice cream, ices	3.9
Candy	16
Baked goods	19
Gelatins and puddings	1, 1.3
Chewing gum	0.80

NEROLIDOL

Chemical formula:



Flavors in which used:
Berry, citrus, rose, fruit

Natural food occurrence:
Cassia (absolute)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.91
Ice cream, ices	0.92
Candy	3.5
Baked goods	2, 8

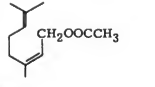
NEROLIN
(See β-Naphthyl ethyl ether)

NEROLINE
(See β-Naphthyl ethyl ether)

NEROSOL
(See Nerol)

NERYL ACETATE
Acetic acid, Neryl ester

Chemical formula:



Flavors in which used:
Citrus, fruit, neroli

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	1.6
Candy	5.1
Baked goods	15

NERYL BUTYRATE
Butyric acid, Neryl ester

Chemical formula: $(C_{10}H_{17})OOCCH_2CH_2CH_3$

Flavors in which used:
Berry, chocolate, cocoa, citrus, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6.2
Ice cream, ices	22
Candy	16
Baked goods	25

NERYL ISOBUTYRATE
Isobutyric acid, Neryl ester

Chemical formula: $(C_{10}H_{17})OOCCH(CH_3)_2$

Flavors in which used:
Citrus, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.2
Ice cream, ices	1.8
Candy	3.3
Baked goods	5.4

NERYL FORMATE
Formic acid, Neryl ester

Chemical formula: $(C_{10}H_{17})OOCH$

Flavors in which used:
Berry, citrus, apple, peach, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.3
Ice cream, ices	23
Candy	17
Baked goods	22

NERYL PROPIONATE
Propionic acid, Neryl ester

Chemical formula: $(C_{10}H_{17})OOCCH_2CH_3$

Flavors in which used:
Berry, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6.3
Ice cream, ices	23
Candy	21
Baked goods	21

NERYL ISOVALERATE
Isovaleric acid, Neryl ester

Chemical formula: $(C_{10}H_{17})OOCCH_2CH(CH_3)_2$

NERYL ISOVALERATE (cont'd)

Flavors in which used:
Berry, rose, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.97
Ice cream, ices	1.6
Candy	4
Baked goods	5.7

NIPASOL
(See Propyl p-hydroxybenzoate)

2,6-NONADIEN-1-OL
2,6-Nonadienol

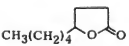
Chemical formula: $CH_3CH_2CH{=}CH(CH_2)_2CH{=}CHCH_2OH$

Flavors in which used:
Fruit, violet, berry

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.01
Ice cream, ices	0.05
Candy	0.05, 0.50
Baked goods	0.01
Liquors	0.01

γ-NONALACTONE
4-Hydroxynonanoic acid, γ-Lactone
γ-Amyl butyrolactone
Aldehyde C-18 (so-called)
Prunolide
Coconut aldehyde

Chemical formula:



$CH_3(CH_2)_4$

Flavors in which used:
Berry, coconut, fruit, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	11
Ice cream, ices	14
Candy	33
Baked goods	55
Gelatin desserts	28
Chewing gum	15
Icings	25

NONALOL
(See Nonyl alcohol)

NONANAL

Chemical formula: $CH_3(CH_2)_7CHO$

Flavors in which used:
Lemon, fruit

Natural food occurrence:
Lemon oil, rose, sweet-orange oil, mandarin, lime, orris, ginger

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	1.3
Candy	4.1
Baked goods	2.3
Gelatin desserts	6.0
Chewing gum	0.20, 38

1,3-NONANEDIOL ACETATE (mixed esters)
Acetic acid, 1,3-Nonanediol mixed esters

Chemical formula: $CH_3COOCH_2CH_2CH(OOCCH_3)CH_2(CH_2)_4CH_3$

Flavors in which used:
Berry, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.30, 1
Ice cream, ices	0.50, 1
Candy	1.5, 6
Baked goods	1.5, 4

NONANOIC ACID

Chemical formula: $CH_3(CH_2)_7COOH$

Flavors in which used:
Berry, fruit, nut, spice

Natural food occurrence:
Cocoa, oil of lavender

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.8
Ice cream, ices	7.8
Candy	6.6
Baked goods	13
Shortening	10

NONANOL ISOVALERATE
(See Nonyl isovalerate)

1-NONANOL
(See Nonyl alcohol)

2-NONANONE

Chemical formula: $CH_3(CH_2)_6COCH_3$

Flavors in which used:
Berry, rose, fruit, cheese

Natural food occurrence:
Rue

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.55
Ice cream, ices	0.10, 1
Candy	0.40, 4
Baked goods	0.40, 4

3-NONANON-1-YL ACETATE

Acetic acid, 1-Hydroxy-3-nonanone ester

Chemical formula: $CH_3(CH_2)_5COCH_2CH_2OOCCH_3$

Flavors in which used:
Fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.30
Ice cream, ices	0.30
Candy	0.80, 5
Baked goods	1
Condiments	10

NONANOYL 4-HYDROXY-3-METHOXYBENZYL-AMIDE

Pelargonyl vanillylamide
4-Hydroxy-3-methoxybenzylnonanamide
Nonanoyl vanillylamide
N-Nonanoyl vanillylamide

Chemical formula: $CH_2NHCOCH_2(CH_2)_6CH_3$

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Candy	10
Baked goods	10
Condiments	10

N-NONANOYL VANILLYLAMIDE

(See Nonanoyl 4-hydroxy-3-methoxybenzylamide)

NONATE

(See Isoamyl nonanoate)

NONOIC ACID

(See Nonanoic acid)

NONYL ACETATE

Acetic acid, Nonyl ester

Chemical formula: $CH_3(CH_2)_8OOCCH_3$

Flavors in which used:
Citrus, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.81
Ice cream, ices	0.81
Candy	1.9
Baked goods	3.1

NONYL ALCOHOL

1-Nonanol

Chemical formula: $CH_3(CH_2)_7CH_2OH$

Flavors in which used:
Butter, citrus, peach, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.70
Ice cream, ices	0.61
Candy	2
Baked goods	1.9
Chewing gum	18

NONYLCARBINOL

(See 1-Decanol)

NONYLIC ACID

(See Nonanoic acid)

NONYL OCTANOATE

Octanoic acid, Nonyl ester

Chemical formula: $CH_3(CH_2)_6COOCH_2(CH_2)_7CH_3$

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Baked goods	0.06

NONYL ISOVALERATE

Isovaleric acid, Nonyl ester

Chemical formula: $CH_3(CH_2)_8OOCCH_2CH(CH_3)_2$

NONYL ISOVALERATE (cont'd)

Flavors in which used:
Fruit, hazelnut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50, 1
Ice cream, ices	0.50
Candy	1, 2
Baked goods	1.4

NOPINENE
(See β-Pinene)

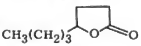
NOVATONE
(See Acetanisole)

OCTADECANOIC ACID
(See Stearic acid)

9-OCTADECENOIC ACID
(See Oleic acid)

γ-OCTALACTONE
4-Hydroxyoctanoic acid, γ-Lactone

Chemical formula:



$CH_3(CH_2)_3$

Flavors in which used:
Coconut, fruit, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.8
Ice cream, ices	16
Candy	16
Baked goods	17
Gelatin desserts	15
Sirups	57

OCTANAL

Chemical formula: $CH_3(CH_2)_6CHO$

Flavors in which used:
Butter, butterscotch, chocolate, lemon, orange, apricot, plum, cheese

Natural food occurrence:
Oil of lavender, oil of lemon, oil of lime, oil of lovage, orange-peel sweet oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.4
Ice cream, ices	1.6
Candy	3.4
Baked goods	4.4
Gelatin desserts	3, 6.1
Chewing gum	0.10

OCTANAL DIMETHYL ACETAL
1,1-Dimethoxyoctane
C-8 Dimethylacetal

Chemical formula: $CH_3(CH_2)_6CH(OCH_3)_2$

Flavors in which used:
Citrus, orange, fruit, melon, liquor, cognac

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.74
Ice cream, ices	0.78
Candy	2.8
Baked goods	2.8
Alcoholic beverages	3

OCTANOIC ACID

Chemical formula: $CH_3(CH_2)_6COOH$

Flavors in which used:
Butter, coconut, pineapple, honey, brandy, cheese

Natural food occurrence:
Apples, cocoa, oranges, peaches, mace oil, tea, oil of lemon, butter acids

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.9
Ice cream, ices	2
Candy	13
Baked goods	18
Condiments	12

1-OCTANOL

Chemical formula: $CH_3(CH_2)_6CH_2OH$

Flavors in which used:
Chocolate, citrus, coconut, fruit

Natural food occurrence:
Tea, oil of sweet orange, grapefruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.9
Ice cream, ices	0.91
Candy	2.8

1-OCTANOL (cont'd)

Foods in which used (cont'd)	Approx. Avg Maximum ppm
Baked goods	3
Gelatins and puddings	1.5
Chewing gum	16, 57

2-OCTANOL

Chemical formula: $CH_3(CH_2)_5CH(OH)CH_3$

Flavors in which used:
Nut

Foods in which used:	Approx. Avg Maximum ppm
Ice cream, ices	0.60
Candy	3
Baked goods	4
Gelatins and puddings	2

2-OCTANONE

Chemical formula: $CH_3(CH_2)_5COCH_3$

Flavors in which used:
Fruit, cheese

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.10, 1
Ice cream, ices	0.20, 1
Candy	0.40, 4
Baked goods	0.40, 4

3-OCTANONE

Chemical formula: $CH_3CH_2COC_5H_{11}$

Flavors in which used:
Citrus, coffee, peach, cheese, spice

Natural food occurrence:
Oil of lavender

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.3
Ice cream, ices	10
Candy	11
Baked goods	11

3-OCTANON-1-OL

Chemical formula: $CH_3(CH_2)_4COCH_2CH_2OH$

Flavors in which used:
Fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.20
Ice cream, ices	0.30
Candy	0.80
Baked goods	0.60, 0.80
Condiments	1

1-OCTEN-3-OL
Amyl vinyl carbinol

Chemical formula: $CH_3(CH_2)_4CHOHCH{=}CH_2$

Flavors in which used:
Fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.20
Ice cream, ices	1
Candy	2
Baked goods	6
Condiments	6
Soups	6

OCTOIC ACID
(See Octanoic acid)

OCTYL ACETATE
Acetic acid, Octyl ester

Chemical formula: $CH_3COO(CH_2)_7CH_3$

Flavors in which used:
Raspberry, apple, cherry, peach, pear, brandy

Natural food occurrence:
Oil of green tea

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.6
Ice cream, ices	0.87
Candy	4.7
Baked goods	6

OCTYL ALCOHOL
(See 1-Octanol)

OCTYL ALCOHOL (secondary)
(See 2-Octanol)

pri-OCTYL ALCOHOL
(See 1-Octanol)

OCTYLALDEHYDE
(See Octanal)

OCTYL BUTYRATE
Butyric acid, Octyl ester

Chemical formula: $CH_3(CH_2)_2COO(CH_2)_7CH_3$

Flavors in which used:
Strawberry, butter, citrus, fruit, cherry, melon, peach, pineapple, pumpkin, liquor, wine

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.59
Ice cream, ices	1.3
Candy	2.9
Baked goods	2.9

OCTYL ISOBUTYRATE
Isobutyric acid, Octyl ester

Chemical formula: $(CH_3)_2CHCOO(CH_2)_7CH_3$

Flavors in which used:
Citrus, fruit, melon, peach, liquor, wine

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	2.4
Candy	3.5
Baked goods	3.5

γ-OCTYL-γ-BUTYROLACTONE
(See γ-Dodecalactone)

OCTYL CROTONYL ACETATE
(See 1,3-Nonanediol acetate (mixed esters))

OCTYL FORMATE
Formic acid, Octyl ester

Chemical formula: $HCOO(CH_2)_7CH_3$

Flavors in which used:
Citrus, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.01, 1
Ice cream, ices	1
Candy	5
Baked goods	7

OCTYL HEPTANOATE
Heptanoic acid, Octyl ester

Chemical formula: $CH_3(CH_2)_5COO(CH_2)_7CH_3$

Flavors in which used:
Citrus, coconut, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.13, 1
Ice cream, ices	0.13, 1
Candy	0.13, 2
Baked goods	0.20, 2

OCTYL OCTANOATE
Octanoic acid, Octyl ester

Chemical formula: $CH_3(CH_2)_6COO(CH_2)_7CH_3$

Flavors in which used:
Citrus, grape, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50, 1
Ice cream, ices	0.50, 1
Candy	0.50, 2
Baked goods	0.50, 2

OCTYL PHENYLACETATE
Phenylacetic acid, Octyl ester

Chemical formula:  $-CH_2COO(CH_2)_7CH_3$

Flavors in which used:
Berry, apple, banana, grape, peach, pear, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	1
Candy	4, 0.20
Baked goods	4

OCTYL PROPIONATE
Propionic acid, Octyl ester

Chemical formula: $CH_3CH_2COO(CH_2)_7CH_3$

Flavors in which used:
Berry, citrus, melon

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.84
Ice cream, ices	0.57
Candy	3.6
Baked goods	2, 4

OCTYL ISOVALERATE
Isovaleric acid, Octyl ester

Chemical formula: $(CH_3)_2CHCH_2COO(CH_2)_7CH_3$

Flavors in which used:
Berry, butter, citrus, apple, cherry, grape, honey, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.90
Ice cream, ices	0.80, 1
Candy	1, 4
Baked goods	1, 4

OIL OF NIOBE
(See Methyl benzoate)

OLEIC ACID

Chemical formula: $CH_3(CH_2)_7CH{=}CH(CH_2)_7COOH$

Flavors in which used:
Butter, cheese, spice

Natural food occurrence:
Butter acids

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.25, 0.40
Ice cream, ices	30
Candy	3.5
Baked goods	25
Condiments	0.02

OLEINIC ACID
(See Oleic acid)

OPTAL
(See Propyl alcohol)

ORANGER CRYSTALS
(See Methyl β-naphthyl ketone)

ORCHIDEE
(See Isoamyl salicylate)

ORIGANOL
(See 4-Carvomenthenol)

2-OXOPROPANAL
(See Pyruvaldehyde)

2-OXOPROPANOIC ACID
(See Pyruvic acid)

4-OXOVALERIC ACID
(See Levulinic acid)

PALATONE
(See Maltol)

PALMITIC ACID
Hexadecanoic acid

Chemical formula: $CH_3(CH_2)_{14}COOH$

Flavors in which used:
Butter, cheese

Natural food occurrence:
Allspice, anise, calamus oil, cascarilla-bark extract, celery seed, butter acids, coffee, tea

Foods in which used:	Approx. Avg Maximum ppm
Seasonings	1

PEACH ALDEHYDE
(See γ-Undecalactone)

PELARGONALDEHYDE
(See Nonanal)

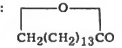
PELARGONIC ACID
(See Nonanoic acid)

PELARGONIC ALDEHYDE
(See Nonanal)

PELARGONYL VANILLYLAMIDE
(See Nonanoyl 4-hydroxy-3-methoxybenzylamide)

ω-PENTADECALACTONE
15-Hydroxypentadecanoic acid, ω-Lactone
Cyclopentadecanolide
14-Hydroxytetradecanoic acid
Thibetolide
Angelica lactone
Exaltolide

Chemical formula:



Flavors in which used:
Berry, fruit, liquor, wine, nut, vanilla

ω-PENTADECALACTONE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.27
Ice cream, ices	0.68
Candy	1.4
Baked goods	1.5
Gelatin desserts	0.10
Alcoholic beverages	0.50

PENTADECANOLIDE
(See ω-Pentadecalactone)

ISOPENTALDEHYDE
(See 3-Methylbutyraldehyde)

PENTANAL
(See Valeraldehyde)

2,3-PENTANEDIONE

Chemical formula: $CH_3COCOCH_2CH_3$

Flavors in which used:
Strawberry, butter, caramel, fruit, rum, cheese

Natural food occurrence:
Coffee

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.60
Ice cream, ices	3.3
Candy	5.9
Baked goods	9.6
Gelatin desserts and puddings	0.28
Toppings	0.30

PENTANOIC ACID
(See Valeric acid)

1-PENTANOL
(See Amyl alcohol)

2-PENTANONE

Chemical formula: $CH_3COCH_2CH_2CH_3$

Flavors in which used:
Fruit

Natural food occurrence:
Pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	13
Ice cream, ices	34
Candy	32
Baked goods	32

4-PENTENOIC ACID

Chemical formula: $CH_2{:}CHCH_2CH_2COOH$

Flavors in which used:
Butter, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	2
Candy	5
Baked goods	5
Margarine	2

PENTYL ALCOHOL
(See Amyl alcohol)

ISOPENTYL ALCOHOL
(See Isoamyl alcohol)

ISOPENTYL BENZOATE
(See Isoamyl benzoate)

PENTYL BUTYRATE
(See Amyl butyrate)

ISOPENTYL BUTYRATE
(See Isoamyl butyrate)

α-PENTYLCINNAMALDEHYDE
(See α-Amylcinnamaldehyde)

ISOPENTYL CINNAMATE
(See Isoamyl cinnamate)

α-PENTYLCINNAMYL ACETATE
(See α-Amylcinnamyl acetate)

α-PENTYLCINNAMYL ALCOHOL
(See α-Amylcinnamyl alcohol)

α-PENTYLCINNAMYL FORMATE
(See α-Amylcinnamyl formate)

α-PENTYLCINNAMYL ISOVALERATE
(See α-Amylcinnamyl isovalerate)

PENTYL FORMATE
(See Amyl formate)

ISOPENTYL FORMATE
(See Isoamyl formate)

ISOPENTYL 2-FURANBUTYRATE
(See Isoamyl 2-furanbutyrate)

ISOPENTYL 2-FURANPROPIONATE
(See Isoamyl 2-furanpropionate)

PENTYL 2-FUROATE
(See Amyl 2-furoate)

PENTYL HEPTANOATE
(See Amyl heptanoate)

PENTYL HEXANOATE
(See Amyl hexanoate)

ISOPENTYL HEXANOATE
(See Isoamyl hexanoate)

ISOPENTYL LAURATE
(See Isoamyl laurate)

ISOPENTYL NONANOATE
(See Isoamyl nonanoate)

PENTYL OCTANOATE
(See Amyl octanoate)

ISOPENTYL OCTANOATE
(See Isoamyl octanoate)

ISOPENTYL PHENYLACETATE
(See Isoamyl phenylacetate)

ISOPENTYL PROPIONATE
(See Isoamyl propionate)

ISOPENTYL PYRUVATE
(See Isoamyl pyruvate)

ISOPENTYL SALICYLATE
(See Isoamyl salicylate)

ISOPENTYL ISOVALERATE
(See Isoamyl isovalerate)

PEPITAL
(See Acetaldehyde phenethyl propyl acetal)

PEPPERMINT CAMPHOR
(See Menthol)

PERILLYL ALCOHOL
(See p-Mentha-1,8-dien-7-ol)

PERUVIOL
(See Nerolidol)

PETROHOL
(See Isopropyl alcohol)

α-PHELLANDRENE

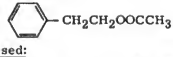
Chemical formula: 

Flavors in which used:
Citrus, spice

Natural food occurrence:
Allspice, star anise, angelica-root oil, bay and bay-leaves extract, dill, fennel (sweet), black pepper, peppermint oil, pimenta oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	10
Ice cream, ices	28
Candy	130
Baked goods	41

PHENETHYL ACETATE
Acetic acid, Phenethyl ester

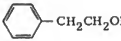
Chemical formula: 

Flavors in which used:
Berry, butter, caramel, floral, rose, fruit, honey, vanilla

PHENETHYL ACETATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.4
Ice cream, ices	2.2
Candy	4.2
Baked goods	5.6

PHENETHYL ALCOHOL

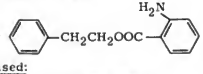
Chemical formula: 

Flavors in which used:
Strawberry, butter, caramel, floral, fruit, honey

Natural food occurrence:
Oranges, raspberries, tea

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.5
Ice cream, ices	8.3
Candy	12
Baked goods	16
Gelatin desserts	0.15
Chewing gum	21, 80

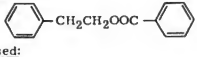
PHENETHYL ANTHRANILATE
Anthranilic acid, Phenethyl ester

Chemical formula: 

Flavors in which used:
Butter, caramel, fruit, grape, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.4
Ice cream, ices	1.9
Candy	6.2
Baked goods	5.8

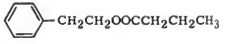
PHENETHYL BENZOATE
Benzoic acid, Phenethyl ester

Chemical formula: 

Flavors in which used:
Fruit, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	1
Candy	2
Baked goods	4
Chewing gum	3.8

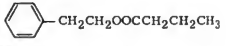
PHENETHYL BUTYRATE
Butyric acid, Phenethyl ester

Chemical formula: 

Flavors in which used:
Strawberry, butter, caramel, floral, apple, peach, pineapple, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.2
Ice cream, ices	8.9
Candy	13
Baked goods	13

PHENETHYL ISOBUTYRATE
Isobutyric acid, Phenethyl ester

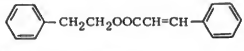
Chemical formula: 

Flavors in which used:
Strawberry, floral, rose, apple, peach, pineapple, honey, cheese

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.4
Ice cream, ices	4
Candy	13
Baked goods	11

PHENETHYL CINNAMATE
Cinnamic acid, Phenethyl ester

Chemical formula:

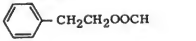


Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.7
Ice cream, ices	0.80
Candy	3.2
Baked goods	3.1
Puddings	0.10

PHENETHYL 3,3-DIMETHYLACRYLATE
(See Phenethyl senecioate)

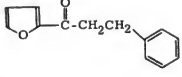
PHENETHYL FORMATE
Formic acid, Phenethyl ester

Chemical formula: 

Flavors in which used:
Berry, apple, apricot, banana, cherry, peach, pear, plum, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	11
Candy	13
Baked goods	15

PHENETHYL 2-FUROATE
2-Furoic acid, Phenethyl ester

Chemical formula: 

Flavors in which used:
Chocolate, mushroom

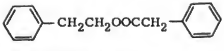
Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.03
Candy	0.03
Baked goods	0.03

PHENETHYL 3-METHYLBUTYRATE
(See Phenethyl isovalerate)

PHENETHYL 3-METHYLCROTONATE
(See Phenethyl senecioate)

PHENETHYL PHENYLACETATE
Phenylacetic acid, Phenethyl ester

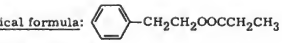
Chemical formula:



Flavors in which used:
Fruit, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.3
Ice cream, ices	4.2
Candy	4.8
Baked goods	5.3
Maraschino cherries	10

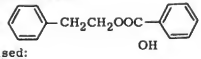
PHENETHYL PROPIONATE
Propionic acid, Phenethyl ester

Chemical formula: 

Flavors in which used:
Fruit, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.6
Ice cream, ices	11
Candy	12
Baked goods	16

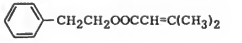
PHENETHYL SALICYLATE
Salicylic acid, Phenethyl ester

Chemical formula: 

Flavors in which used:
Apricot, peach

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.75
Ice cream, ices	0.67
Candy	1.5
Baked goods	2

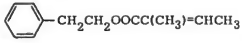
PHENETHYL SENECIOATE
Phenethyl 3,3-dimethylacrylate
Phenethyl 3-methylcrotonate

Chemical formula: 

Flavors in which used:
Liquor, wine

Foods in which used:	Approx. Avg Maximum ppm
Ice cream, ices	5
Candy	5
Alcoholic beverages	5

PHENETHYL TIGLATE
Tiglic acid, Phenethyl ester

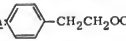
Chemical formula: 

Flavors in which used:
Fruit, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.80, 0.90
Ice cream, ices	4.3
Candy	10
Baked goods	10

PHENETHYL ISOVALERATE

Isovaleric acid, Phenethyl ester

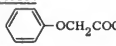
Chemical formula: 

Flavors in which used:

Apple, apricot, peach, pear, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	2.5
Candy	5.9
Baked goods	6.1
Chewing gum	0.80, 45

PHENOXYACETIC ACID

Chemical formula: 

Flavors in which used:

Fruit, honey

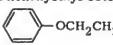
Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.37
Ice cream, ices	1
Candy	2.2
Baked goods	2.2

PHENOXYETHANOIC ACID

(See Phenoxyacetic acid)

2-PHENOXYETHYL ISOBUTYRATE

Isobutyric acid, 2-Phenoxyethyl ester

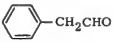
Chemical formula: 

Flavors in which used:

Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.90, 5.0
Ice cream, ices	5, 30
Candy	15, 30
Baked goods	15, 30

PHENYLACETALDEHYDE

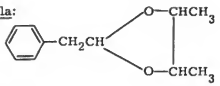
Chemical formula: 

Flavors in which used:

Raspberry, strawberry, apricot, cherry, peach, honey, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.68
Ice cream, ices	0.75
Foods in which used (cont'd):	Approx. Avg Maximum ppm
Candy	1.6
Baked goods	2
Chewing gum	1.7, 87

PHENYLACETALDEHYDE 2,3-BUTYLENE GLYCOL ACETAL

Chemical formula: 

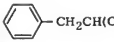
Flavors in which used:

Floral, fruit

Foods in which used:	Approx. Avg Maximum ppm
Candy	4

PHENYLACETALDEHYDE DIMETHYL ACETAL

Viridine

Chemical formula: 

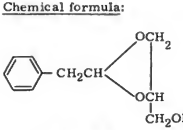
Flavors in which used:

Fruit, apricot, cherry, honey, spice

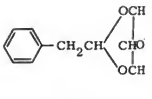
Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.40
Ice cream, ices	0.78
Candy	1.4
Baked goods	8.8
Chewing gum	1

PHENYLACETALDEHYDE GLYCERYL ACETAL

Chemical formula:



about 60%



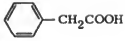
about 40%

Flavors in which used:

Floral, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5
Candy	0.06, 20
Ice cream, ices	20

PHENYLACETIC ACID

Chemical formula: 

Flavors in which used:
Butter, chocolate, rose, honey, vanilla

Natural food occurrence:
Japanese mint, oil of neroli, black pepper

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.8
Ice cream, ices	5.3
Candy	5.9
Baked goods	12
Gelatin desserts	27
Chewing gum	5.4, 11
Liquors	0.10
Sirups	0.10

PHENYLACROLEIN
(See Cinnamaldehyde)

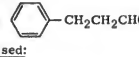
β-PHENYLACRYLIC ACID
(See Cinnamic acid)

γ-PHENYLALLYL ALCOHOL
(See Cinnamyl alcohol)

PHENYLALLYL CINNAMATE
(See Cinnamyl cinnamate)

γ-PHENYLALLYL PROPIONATE
(See Cinnamyl propionate)

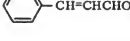
4-PHENYL-2-BUTANOL

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.12, 0.90
Ice cream, ices	0.60, 6
Candy	1.5, 15
Baked goods	1.5, 15

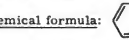
4-PHENYL-3-BUTEN-2-OL

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	20
Candy	0.03, 20
Baked goods	20

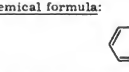
4-PHENYL-3-BUTEN-2-ONE
Benzilidene acetone
Methyl styryl ketone
Benzylacetone

Chemical formula: 

Flavors in which used:
Chocolate, cocoa, fruit, cherry, nut, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.82
Ice cream, ices	0.84
Candy	3.7
Baked goods	4.5
Gelatin desserts	2.1
Shortening	0.20

4-PHENYL-2-BUTYL ACETATE
Acetic acid, 4-Phenyl-2-butyl ester

Chemical formula: 

Flavors in which used:
Fruit, peach

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3, 0.10
Ice cream, ices	3
Candy	3
Baked goods	3, 0.50

2-PHENYL-m-DIOXAN-5-OL
(See Benzaldehyde glyceryl acetal)

PHENYL CARBINOL
(See Benzyl alcohol)

PHENYL DIMETHYL CARBINYL ISOBUTYRATE
(See α,α-Dimethylbenzyl isobutyrate)

1-PHENYLETHANOL
(See α-Methylbenzyl alcohol)

2-PHENYLETHYL ACETATE
(See Phenethyl acetate)

α-PHENYLETHYL ALCOHOL
(See α-Methylbenzyl alcohol)

β-PHENYLETHYL ALCOHOL
(See Phenethyl alcohol)

2-PHENYLETHYL ALCOHOL
(See Phenethyl alcohol)

2-PHENYLETHYL ANTHRANILATE
(See Phenethyl anthranilate)

2-PHENYLETHYL BENZOATE
(See Phenethyl benzoate)

2-PHENYLETHYL BUTYRATE
(See Phenethyl butyrate)

2-PHENYLETHYL ISOBUTYRATE
(See Phenethyl isobutyrate)

PHENYL ETHYL CARBINOL
(See 1-Phenyl-1-propanol)

2-PHENYLETHYL CINNAMATE
(See Phenethyl cinnamate)

2-PHENYLETHYL FORMATE
(See Phenethyl formate)

2-PHENYLETHYL 2-FUROATE
(See Phenethyl 2-furoate)

PHENYLETHYL METHYL CARBINOL
(See 4-Phenyl-2-butanol)

PHENYLETHYL METHYL CARBINYL ACETATE
(See 4-Phenyl-2-butyl acetate)

PHENYLETHYL METHYL ETHYL CARBINOL
(See 1-Phenyl-3-methyl-3-pentanol)

2-PHENYLETHYL PHENYLACETATE
(See Phenethyl phenylacetate)

2-PHENYLETHYL PROPIONATE
(See Phenethyl propionate)

2-PHENYLETHYL SALICYLATE
(See Phenethyl salicylate)

2-PHENYLETHYL SENECIOATE
(See Phenethyl senecioate)

2-PHENYLETHYL TIGLATE
(See Phenethyl tiglate)

2-PHENYLETHYL ISOVALERATE
(See Phenethyl isovalerate)

PHENYLFORMIC ACID
(See Benzoic acid)

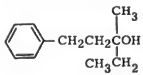
O-PHENYLGLYCOLIC ACID
(See Phenoxyacetic acid)

PHENYLIUM
(See Phenoxyacetic acid)

PHENYL METHANOL
(See Benzyl alcohol)

1-PHENYL-3-METHYL-3-PENTANOL

Chemical formula:



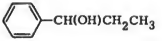
Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.16
Candy	0.16
Gelatin desserts	0.60

1-PHENYL-2-PENTANOL
(See α-Propylphenethyl alcohol)

2-PHENYLPROPANAL
(See 2-Phenylpropionaldehyde)

1-PHENYL-1-PROPANOL

Chemical formula: 

Flavors in which used:
Fruit, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50
Ice cream, ices	0.50
Candy	1.5
Baked goods	1.5

2-PHENYL-1-PROPANOL
(See β-Methylphenethyl alcohol)

3-PHENYL-1-PROPANOL

Chemical formula: 

Flavors in which used:
Strawberry, apricot, peach, plum, hazelnut, pistachio, cinnamon, walnut

Natural food occurrence:
Tea

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.73
Ice cream, ices	1.4
Candy	2.8
Baked goods	3.3
Liqueurs	5.0
Chewing gum	4.3

3-PHENYLPROPENAL
(See Cinnamaldehyde)

3-PHENYLPROPENOIC ACID
(See Cinnamic acid)

3-PHENYL-2-PROPEN-1-OL
(See Cinnamyl alcohol)

3-PHENYL-2-PROPENYL PROPANOATE
(See Cinnamyl propionate)

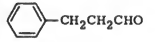
2-PHENYLPROPIONALDEHYDE

Chemical formula: 

Flavors in which used:
Berry, rose, apricot, cherry, peach, plum, almond

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.61
Ice cream, ices	0.30
Candy	0.85
Baked goods	0.85

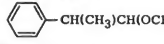
3-PHENYLPROPIONALDEHYDE
Hydrocinnamaldehyde

Chemical formula: 

Flavors in which used:
Berry, cherry, peach, plum, almond, cinnamon

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	1.7
Candy	5
Baked goods	5.5
Gelatin desserts	4.3

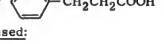
2-PHENYLPROPIONALDEHYDE DIMETHYL ACETAL
Hydratropaldehyde dimethyl acetal

Chemical formula: 

Flavors in which used:
Berry, floral, rose, fruit, honey, mushroom, nut, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.26
Ice cream, ices	0.51
Candy	1.5
Baked goods	3.1
Chewing gum	5
Condiments	5

3-PHENYLPROPIONIC ACID

Chemical formula: 

Flavors in which used:
Fruit, cheese

Natural food occurrence:
Raspberries

3-PHENYLPROPIONIC ACID (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.02, 1
Ice cream, ices	0.48, 1
Candy	0.80, 4
Baked goods	17
Gelatins	1.2
Toppings	1
Dairy products	2

3-PHENYLPROPYL ACETATE
Acetic acid, 3-Phenylpropyl ester

Chemical formula: 

Flavors in which used:
Berry, fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.2
Ice cream, ices	4.8
Candy	4.6
Baked goods	6.3
Chewing gum	10
Condiments	0.10

PHENYLPROPYL ALCOHOL
(See 3-Phenyl-1-propanol)

α-PHENYLPROPYL ALCOHOL, BUTYRIC ESTER
(See 2-Phenylpropyl butyrate)

α-PHENYLPROPYL ALCOHOL, ISOBUTYRIC ESTER
(See 2-Phenylpropyl isobutyrate)

PHENYLPROPYL ALDEHYDE
(See Hydrocinnamaldehyde)

α-PHENYLPROPYL BUTYRATE
(See α-Ethylbenzyl butyrate)

2-PHENYLPROPYL BUTYRATE
Butyric acid, 2-Phenylpropyl ester

Chemical formula: 

Flavors in which used:
None listed

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	1
Candy	2
Baked goods	2

2-PHENYLPROPYL ISOBUTYRATE
Hydratropyl isobutyrate
α-Phenylpropyl alcohol, Isobutyric ester

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5
Ice cream, ices	20
Candy	20

3-PHENYLPROPYL ISOBUTYRATE
Isobutyric acid, 3-Phenylpropyl ester

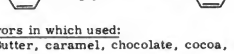
Chemical formula: 

Flavors in which used:
Apple, apricot, peach, pear, pineapple, plum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	3
Candy	5
Baked goods	5.8

3-PHENYLPROPYL CINNAMATE
Cinnamic acid, 3-Phenylpropyl ester

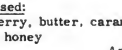
Chemical formula:



Flavors in which used:
Butter, caramel, chocolate, cocoa, coconut, grape, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.4
Ice cream, ices	4.1
Candy	4.3
Baked goods	5.3

3-PHENYLPROPYL FORMATE
Formic acid, 3-Phenylpropyl ester

Chemical formula: 

Flavors in which used:
Currant, raspberry, butter, caramel, apricot, peach, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	0.90, 1.5
Candy	3, 5
Baked goods	2.7

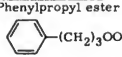
3-PHENYLPROPYL HEXANOATE
Hexanoic acid, 3-Phenylpropyl ester

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.67
Ice cream, ices	1.3
Candy	3.3
Baked goods	3.7

3-PHENYLPROPYL PROPIONATE
Propionic acid, 3-Phenylpropyl ester

Chemical formula: 

Flavors in which used:
Apricot

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.49
Ice cream, ices	0.52
Candy	2
Baked goods	2.4
Chewing gum	0.80, 50

2-(3-PHENYLPROPYL)TETRAHYDROFURAN
2-Hydrocinnamyl tetrahydrofuran

Chemical formula: 

Flavors in which used:
Fruit, honey, maple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50
Ice cream, ices	2
Candy	0.03, 2
Baked goods	--
Gelatins and puddings	2
Chewing gum	2.3

3-PHENYLPROPYL ISOVALERATE
Isovaleric acid, 3-Phenylpropyl ester

Chemical formula: 

Flavors in which used:
Butter, caramel, apple, pear, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.90
Ice cream, ices	0.90
Candy	1.8
Baked goods	1.7

α-PINENE

Chemical formula: 

Flavors in which used:
Lemon, nutmeg

Natural food occurrence:
Angelica-root oil, anise, star anise, asafoetida oil, coriander, cumin, common fennel, grapefruit, juniper berries, laurel-leaves oil, oil of lavender, oil of lime, mandarin, orange leaf (absolute), black pepper, peppermint oil, pimento oil, yarrow (herb)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	16, 54
Ice cream, ices	64
Candy	48
Baked goods	160
Condiments	150, 2.6

β-PINENE

Chemical formula: 

Flavors in which used:
Citrus

Natural food occurrence:
Black-currant buds, coriander, cumin, black pepper, yarrow (herb)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.05, 16
Ice cream, ices	64
Candy	48, 600
Baked goods	48, 600

2-PINENE
(See α-Pinene)

2(10)-PINENE
(See β-Pinene)

PIPERIDINE

Chemical formula:

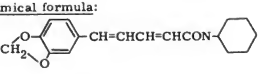
Flavors in which used:
Spice

Natural food occurrence:
Black pepper

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3
Candy	5
Baked goods	0.05, 5
Meats	0.05
Soups	0.05
Condiments	0.05

PIPERINE

Chemical formula:



Flavors in which used:
Celery soda

Natural food occurrence:
Black pepper

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.01

d-PIPERITONE

Chemical formula:

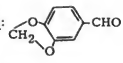
Flavors in which used:
Fruit, mint, spice

Natural food occurrence:
Japanese mint

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1, 11
Ice cream, ices	18
Candy	18
Baked goods	18

PIPERONAL

Chemical formula:



Flavors in which used:
Strawberry, cola, cherry, rum, maple, nut, vanilla

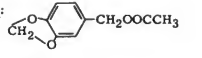
Natural food occurrence:
Vanilla, black pepper

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6
Ice cream, ices	7
Candy	7.4
Baked goods	18
Gelatins and puddings	5.8
Chewing gum	36

PIPERONYL ACETATE

Acetic acid, Piperonyl ester

Chemical formula:



Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	27, 50
Ice cream, ices	80, 110
Candy	70, 80
Baked goods	55, 80

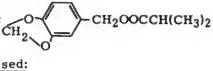
PIPERONYL ALDEHYDE

(See Piperonal)

PIPERONYL ISOBUTYRATE

Isobutyric acid, Piperonyl ester

Chemical formula:



Flavors in which used:
Fruit, cheese

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.05, 1
Ice cream, ices	0.05
Candy	0.05, 3.5
Baked goods	0.10, 3.5

PIPEROYLPIPERIDENE
(See Piperine)

PROPANAL
(See Propionaldehyde)

PROPANOIC ACID
(See Propionic acid)

ISOPROPANOL
(See Isopropyl alcohol)

1-PROPANOL
(See Propyl alcohol)

2-PROPANOL
(See Isopropyl alcohol)

1-PROPENE-1,2,3-tri-CARBOXYLIC ACID
(See Aconitic acid)

2-PROPENE-1-THIOL
(See Allyl mercaptan)

p-PROPENYLANISOLE
(See Anethole)

2-PROPENYL-6-ETHOXYPHENOL
(See Propenyl guaethol)

PROPENYLGUAETHOL
6-Ethoxy-m-anol

Chemical formula: CH_3CH_2O-C$_6$H$_3$(HO)-$CH{=}CHCH_3$

Flavors in which used:
Chocolate, maple, nut, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.9
Ice cream, ices	6.3
Candy	20
Baked goods	20
Puddings	2.5
Chocolate	25

4-PROPENYLGUAIACOL
(See Isoeugenol)

2-PROPENYL HEXANOATE
(See Allyl hexanoate)

4-PROPENYLVERATROLE
(See Isoeugenyl methyl ether)

PROPIONALDEHYDE

Chemical formula: CH_3CH_2CHO

Flavors in which used:
Fruit

Natural food occurrence:
Apples, onions

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.9
Ice cream, ices	12
Candy	11
Baked goods	13

PROPIONIC ACID

Chemical formula: CH_3CH_2COOH

Flavors in which used:
Butter, fruit

Natural food occurrence:
Apples, strawberries, tea, violet leaves (absolute)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.2, 5.8
Ice cream, ices	6
Candy	14
Baked goods	20
Cheese	600

PROPYL ACETATE
Acetic acid, Propyl ester

Chemical formula: $CH_3COO(CH_2)_2CH_3$

Flavors in which used:
Berry, currant, raspberry, strawberry, apple, cherry, peach, pineapple, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4
Ice cream, ices	16
Candy	12
Baked goods	14

ISOPROPYL ACETATE
Acetic acid, Isopropyl ester

Chemical formula: $CH_3COOCH(CH_3)_2$

Flavors in which used:
Fruit, liquor, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	16
Ice cream, ices	17
Candy	58
Baked goods	75

PROPYLACETIC ACID
(See Valeric acid)

ISOPROPYLACETIC ACID
(See Isovaleric acid)

p-ISOPROPYLACETOPHENONE

Chemical formula: $(CH_3)_2CH$–C$_6$H$_4$–$COCH_3$

Flavors in which used:
Fruit, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.08
Ice cream, ices	0.10
Candy	0.50
Baked goods	1
Pickle	5

PROPYL 3-(2-FURYL) ACRYLATE
(See Propyl 2-furanacrylate)

PROPYL ALCOHOL
1-Propanol

Chemical formula: $CH_3CH_2CH_2OH$

Flavors in which used:
Fruit

Natural food occurrence:
Cognac (green oil), cognac (white oil), onion oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50, 5
Ice cream, ices	0.50
Candy	0.50
Baked goods	0.65

ISOPROPYL ALCOHOL

Chemical formula: $CH_3CHOHCH_3$

Flavors in which used:
Raspberry, banana, root beer, cinnamon, ginger, vanilla

Natural food occurrence:
Apples

Foods in which used:	Approx. Avg Maximum ppm
Beverages	25
Candy	10, 75
Baked goods	75

PROPYL ALDEHYDE
(See Propionaldehyde)

p-PROPYL ANISOLE

Chemical formula: CH_3O–C$_6$H$_4$–$CH_2CH_2CH_3$

Flavors in which used:
Licorice, root beer, spice, vanilla, wintergreen, birch beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.3
Ice cream, ices	9.9
Candy	64
Baked goods	67

p-ISOPROPYL BENZALDEHYDE
(See Cuminaldehyde)

PROPYL BENZOATE
Benzoic acid, Propyl ester

Chemical formula: C$_6$H$_5$–$COOCH_2CH_2CH_3$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	11
Ice cream, ices	44
Candy	33
Baked goods	33

ISOPROPYL BENZOATE
Benzoic acid, Isopropyl ester

Chemical formula: C$_6$H$_5$–$COOCH(CH_3)_2$

ISOPROPYL BENZOATE (cont'd)

Flavors in which used:
Berry

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50
Ice cream, ices	1
Candy	1
Baked goods	1

p-ISOPROPYLBENZYL ALCOHOL

Chemical formula: $(CH_3)_2CH$-C$_6$H$_4$-CH_2OH

Flavors in which used:
Berry, fruit, liquor, spice

Natural food occurrence:
Cumin, caraway seeds

Foods in which used:	Approx. Avg Maximum ppm
Beverages	11
Ice cream, ices	0.47
Candy	33
Baked goods	35

PROPYL BUTYRATE
Butyric acid, Propyl ester

Chemical formula: $CH_3(CH_2)_2COOCH_2CH_2CH_3$

Flavors in which used:
Strawberry, banana, pineapple, plum, tutti frutti, liquor, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6.8
Ice cream, ices	4.6
Candy	24
Baked goods	16

ISOPROPYL BUTYRATE
Butyric acid, Isopropyl ester

Chemical formula: $CH_3CH_2CH_2COOCH(CH_3)_2$

Flavors in which used:
Berry, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	9.7
Ice cream, ices	21
Candy	39
Baked goods	39

PROPYL ISOBUTYRATE
Isobutyric acid, Propyl ester

Chemical formula: $(CH_3)_2CHCOOCH_2CH_2CH_3$

Flavors in which used:
Strawberry, banana, pineapple, plum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6.8
Ice cream, ices	4.8
Candy	24
Baked goods	20

ISOPROPYL ISOBUTYRATE
Isobutyric acid, Isopropyl ester

Chemical formula: $(CH_3)_2CHCOOCH(CH_3)_2$

Flavors in which used:
Pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	12, 25
Ice cream, ices	18, 25
Candy	58, 100
Baked goods	60, 100

PROPYL CINNAMATE
Cinnamic acid, Propyl ester

Chemical formula: C$_6$H$_5$-CH=$CHCOOCH_2CH_2CH_3$

Flavors in which used:
Berry, floral, rose, apple, grape, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.6
Ice cream, ices	2.9
Candy	4.9
Baked goods	4.3
Gelatins and puddings	0.07

ISOPROPYL CINNAMATE
Cinnamic acid, Isopropyl ester

Chemical formula: C$_6$H$_5$-CH=$CHCOOCH(CH_3)_2$

Flavors in which used:
Berry, raspberry, fruit, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.52
Ice cream, ices	0.75
Candy	1.3
Baked goods	2.3

ISOPROPYL-o-CRESOL
(See Carvacrol)

PROPYL FORMATE
Formic acid, Propyl ester

Chemical formula: $HCOOCH_2CH_2CH_3$

Flavors in which used:
Berry, apple, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	20
Ice cream, ices	57
Candy	65
Baked goods	85

ISOPROPYL FORMATE
Formic acid, Isopropyl ester

Chemical formula: $HCOOCH(CH_3)_2$

Flavors in which used:
Berry, melon

Foods in which used:	Approx. Avg Maximum ppm
Beverages	18, 25
Ice cream, ices	18, 25
Candy	55, 100
Baked goods	60, 100

ISOPROPYLFORMIC ACID
(See Isobutyric acid)

PROPYL 2-FURANACRYLATE
2-Furanacrylic acid, Propyl ester

Chemical formula:

Flavors in which used:
Coffee, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3
Candy	0.03

PROPYL 2-FUROATE
2-Furoic acid, Propyl ester

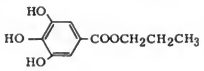
Chemical formula:

Flavors in which used:
Chocolate, mushroom

Foods in which used:	Approx. Avg Maximum ppm
Candy	0.03
Baked goods	0.03
Condiments	0.20

PROPYL GALLATE
Gallic acid, Propyl ester

Chemical formula:



Flavors in which used:
Lemon, lime, fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.08
Ice cream, ices	0.05
Candy	0.16
Baked goods	0.97
Gelatin desserts	0.03

PROPYL HEPTANOATE
Heptanoic acid, Propyl ester

Chemical formula: $CH_3(CH_2)_5COOCH_2CH_2CH_3$

Flavors in which used:
Berry, coffee, fruit, cognac, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.8
Ice cream, ices	5.1
Candy	5.9
Liqueurs	3
Baked goods	18

PROPYL HEXANOATE
Hexanoic acid, Propyl ester

Chemical formula: $CH_3(CH_2)_4COOCH_2CH_2CH_3$

Flavors in which used:
Pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.2
Ice cream, ices	3
Candy	8

ISOPROPYL HEXANOATE
Hexanoic acid, Isopropyl ester

Chemical formula: $CH_3(CH_2)_4COOCH(CH_3)_2$

Flavors in which used:
Pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50
Ice cream, ices	5.5, 10
Candy	20, 40
Baked goods	20, 40

p-ISOPROPYL HYDROCINNAMALDEHYDE
(See 3-(p-Isopropyl) phenyl propionaldehyde)

PROPYL p-HYDROXYBENZOATE
Propylparaben
Nipasol
Propylparasept

Chemical formula: HO-  -$COOCH_2CH_2CH_3$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.20, 32
Ice cream, ices	130
Candy	96
Baked goods	96

PROPYLIC ALCOHOL
(See Propyl alcohol)

3-PROPYLIDENEPHTHALIDE

Chemical formula: 

Flavors in which used:
Fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	--
Ice cream, ices	5
Candy	5
Baked goods	5

PROPYL MERCAPTAN

Chemical formula: $CH_3\text{-}CH_2\text{-}CH_2\text{-}SH$

Flavors in which used:
Berry, onion

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	0.5
Pickles	0.1

PROPYL METHOXYBENZENE
(See p-Propyl anisole)

PROPYLPARABEN
(See Propyl p-hydroxybenzoate)

PROPYLPARASEPT
(See Propyl p-hydroxybenzoate)

α-PROPYLPHENETHYL ALCOHOL

Chemical formula:  -$CH_2CHOH(CH_2)_2CH_3$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	5
Candy	5
Puddings	5

β-ISOPROPYL PHENYLACETALDEHYDE
(See 3-Methyl-2-phenylbutyraldehyde)

p-ISOPROPYLPHENYLACETALDEHYDE
p-Cymene-7-carboxaldehyde

Chemical formula: $(CH_3)_2CH$-  -CH_2CHO

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.10
Ice cream, ices	0.50
Candy	0.50

PROPYL PHENYLACETATE
Phenylacetic acid, Propyl ester

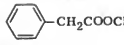
Chemical formula:  -$CH_2COOCH_2CH_2CH_3$

Flavors in which used:
Butter, caramel, rose, fruit, honey

PROPYL PHENYLACETATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.30, 1
Ice cream, ices	0.30, 1.5
Candy	2.7
Baked goods	1, 5

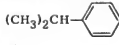
ISOPROPYL PHENYLACETATE
Phenylacetic acid, Isopropyl ester

Chemical formula: 

Flavors in which used:
Butter, caramel, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.20, 0.50
Ice cream, ices	1.8
Candy	0.50, 8
Baked goods	3, 8

3-(p-ISOPROPYL) PHENYL PROPIONALDEHYDE

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.80
Ice cream, ices	0.80
Candy	1.3
Baked goods	3
Chewing gum	5

PROPYL PROPIONATE
Propionic acid, Propyl ester

Chemical formula: $CH_3CH_2COOCH_2CH_2CH_3$

Flavors in which used:
Banana, cherry, melon, peach, pineapple, plum, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6
Ice cream, ices	12
Candy	25
Baked goods	25

ISOPROPYL PROPIONATE
Propionic acid, Isopropyl ester

Chemical formula: $CH_3CH_2COOCH(CH_3)_2$

Flavors in which used:
Fruit, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	9.7
Ice cream, ices	5, 50
Candy	40, 50
Baked goods	30, 50

PROPYL ISOVALERATE
Isovaleric acid, Propyl ester

Chemical formula: $(CH_3)_2CHCH_2COOCH_2CH_2CH_3$

Flavors in which used:
Strawberry, apple, banana, peach

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5
Ice cream, ices	16
Candy	17
Baked goods	20

ISOPROPYL ISOVALERATE
Isovaleric acid, Isopropyl ester

Chemical formula: $(CH_3)_2CHCH_2COOCH(CH_3)_2$

Flavors in which used:
Pineapple, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.4
Ice cream, ices	3.4
Candy	11
Baked goods	11

PRUNOLIDE
(See γ-Nonalactone)

ISOPULEGOL

Chemical formula: 

Flavors in which used:
Berry, mint

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7.4
Ice cream, ices	29
Candy	23
Baked goods	23

PULEGONE

Chemical formula:

Flavors in which used:
Peppermint

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5, 8
Ice cream, ices	5, 32
Candy	17,
Baked goods	24, 25

ISOPULEGONE

Chemical formula:

Flavors in which used:
Berry, fruit, mint

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4
Ice cream, ices	12
Candy	16
Baked goods	16

ISOPULEGYL ACETATE
Acetic acid, Isopulegyl ester

Chemical formula: $(C_{10}H_{17})OOCCH_3$
(See Isopulegol)

Flavors in which used:
Berry, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.8
Ice cream, ices	22
Candy	19
Baked goods	19

PYRIDINE

Chemical formula:

Flavors in which used:
Chocolate

Natural food occurrence:
Coffee

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	0.02, 0.12
Candy	0.40
Baked goods	0.40

PYROMUCIC ALDEHYDE
(See Furfural)

PYRORACEMIC ACID
(See Pyruvic acid)

PYRUVALDEHYDE

Chemical formula: CH_3COCHO

Flavors in which used:
Coffee, honey, maple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	1
Candy	0.03, 5
Baked goods	0.03, 5

PYRUVIC ACID

Chemical formula: $CH_3COCOOH$

Flavors in which used:
Coffee, rum

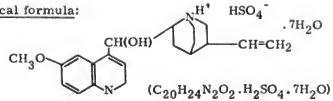
Natural food occurrence:
Coffee

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.25
Ice cream, ices	0.25, 20
Candy	27
Baked goods	30
Chewing gum	110

PYRUVIC ALDEHYDE
(See Pyruvaldehyde)

QUININE BISULFATE

Chemical formula:



$(C_{20}H_{24}N_2O_2.H_2SO_4.7H_2O)$

QUININE BISULFATE (cont'd)

Flavors in which used:
Bitters

Foods in which used:	Approx. Avg Maximum ppm
Beverages	95, 100

QUININE HYDROCHLORIDE

Chemical formula: $C_{20}H_{24}N_2O_2.HCl.2H_2O$

Flavors in which used:
Bitters, citrus, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	110

QUININE SULFATE

Chemical formula: $(C_{20}H_{24}N_2O_2)_2.H_2SO_4.7H_2O$

Flavors in which used:
Bitters

Foods in which used:	Approx. Avg Maximum ppm
Beverages	100

ISOQUINOLINE

Chemical formula:

Flavors in which used:
Vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.25
Ice cream, ices	0.25
Candy	1
Baked goods	0.004, 1

RACEMIC ACID
(See Tartaric acid (d-, l-, dl-, meso-))

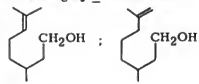
RALDEINE ®
(See Methyl-α-ionone)
(See Methyl-β-ionone)

RESORCINOL DIMETHYL ETHER
(See m-Dimethoxybenzene)

RHODINAL
(See Citronellal)

RHODINOL
Commercial Rhodinol is largely l-Citronellol

Chemical formula:



Flavors in which used:
Strawberry, chocolate, rose, grape, honey, spice, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	2.1
Candy	7.6
Baked goods	8.1
Gelatin desserts	2.9
Chewing gum	31
Jelly	0.92

RHODINYL ACETATE
Acetic acid, Rhodinyl ester

Chemical formula: $(C_{10}H_{19})OOCCH_3$
(See Rhodinol)

Flavors in which used:
Berry, coconut, apricot, floral, rose, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.8
Ice cream, ices	1.4
Candy	9.4
Baked goods	18

RHODINYL BUTYRATE
Butyric acid, Rhodinyl ester

Chemical formula: $(C_{10}H_{19})OOC(CH_2)_2CH_3$

Flavors in which used:
Raspberry, strawberry, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.94
Ice cream, ices	1.1
Candy	3
Baked goods	9.7
Chewing gum	1.1

RHODINYL ISOBUTYRATE
Isobutyric acid, Rhodinyl ester

Chemical formula: $(C_{10}H_{19})OOCCH(CH_3)_2$

Flavors in which used:
Raspberry, floral, rose, apple, pear, pineapple, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.1
Ice cream, ices	1.8
Candy	3.3
Baked goods	4.5
Gelatin desserts	0.01

RHODINYL FORMATE
Formic acid, Rhodinyl ester

Chemical formula: $(C_{10}H_{19})OOCH$

Flavors in which used:
Raspberry, rose, apple, cherry, plum, pear, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	1.8
Candy	4.3
Baked goods	4.9
Gelatin desserts	0.08

RHODINYL PHENYLACETATE
Phenylacetic acid, Rhodinyl ester

Chemical formula: $(C_{10}H_{19})OOCCH_2$ 

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.2
Ice cream, ices	1.2
Candy	3.8
Baked goods	4.4

RHODINYL PROPIONATE
Propionic acid, Rhodinyl ester

Chemical formula: $(C_{10}H_{19})OOCCH_2CH_3$

Flavors in which used:
Berry, rose, plum, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.8
Ice cream, ices	2.4
Candy	4.9
Baked goods	5.8

RHODINYL ISOVALERATE
Isovaleric acid, Rhodinyl ester

Chemical formula: $(C_{10}H_{19})OOCCH_2CH(CH_3)_2$

Flavors in which used:
Berry, rose, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	2.3
Candy	7.2
Baked goods	7.2

RUM ETHER
Ethyl oxyhydrate

Chemical formula: A mixture, defined as follows: Rum ether shall consist of at least 99% water, ethanol, ethyl acetate, methanol, ethyl formate, acetone, acetaldehyde, and formaldehyde. It shall all distill at a temperature not exceeding 100°C at atmospheric pressure and shall leave no residue on evaporation. The methanol and formaldehyde contents, combined, shall not exceed 5%.

Flavors in which used:
Butter, liquor, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	67
Ice cream, ices	110
Candy	320
Baked goods	230
Gelatins and puddings	1.7
Chewing gum	380
Alcoholic beverages	80, 1,600

SALICYLALDEHYDE

Chemical formula: 

Flavors in which used:
Butter, caramel, violet, fruit, muscatel, nut, spice, cinnamon, cassia, vanilla

Natural food occurrence:
Cassia-bark extract

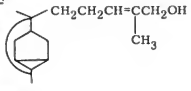
SALICYLALDEHYDE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.55
Ice cream, ices	1.1
Candy	1.8
Baked goods	6.3
Chewing gum	11, 18
Condiments	2
Liqueurs	5

SALICYLIC ETHER
(See Ethyl salicylate)

SANTALOL (α-, β-)

Chemical formula:



Flavors in which used:
Floral, fruit

Natural food occurrence:
Sandalwood oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.06, 2
Ice cream, ices	0.35, 2
Candy	1, 10
Baked goods	1, 8

SANTALYL ACETATE
Acetic acid, Santalyl ester

Chemical formula: $(C_{15}H_{23})OOCCH_3$
(See Santalol)

Flavors in which used:
Floral, pear, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.53
Ice cream, ices	0.78
Candy	2
Baked goods	2
Chewing gum	2.3

SANTALYL PHENYLACETATE
Phenylacetic acid, Santalyl ester

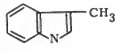
Chemical formula: $(C_{15}H_{23})OOCCH_2$- 

Flavors in which used:
Butter, caramel, fruit, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	0.95
Candy	2
Baked goods	2

SKATOLE

Chemical formula:

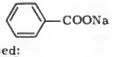


Flavors in which used:
Berry, grape, cheese, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.75
Ice cream, ices	1
Candy	0.78
Baked goods	0.80
Gelatin desserts	0.01
Chewing gum	0.10

SODIUM BENZOATE
Benzoic acid, Sodium salt

Chemical formula:



Flavors in which used:
Berry, raspberry, lemon, orange, fruit, cherry, liquor, tobacco

Foods in which used:	Approx. Avg Maximum ppm
Beverages	350
Ice cream, ices	39
Candy	350
Baked goods	300
Chewing gum	12

SPIRIT OF NITROUS ETHER
(See Ethyl nitrite)

STEARIC ACID
Octadecanoic acid

Chemical formula: $CH_3(CH_2)_{16}COOH$

Flavors in which used:
Butter, vanilla

Natural food occurrence:
Butter acids, cascarilla-bark extract

STEARIC ACID (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2, 10
Baked goods	3.5
Candy	4,000

STRAWBERRY ALDEHYDE
(See Ethyl methyl phenylglycidate)

STYRACIN
(See Cinnamyl cinnamate)

STYRALYL ACETATE
(See α-Methylbenzyl acetate)

STYRALYL ALCOHOL
(See α-Methylbenzyl alcohol)

STYRALYL BUTYRATE
(See α-Methylbenzyl butyrate)

STYRALYL ISOBUTYRATE
(See α-Methylbenzyl isobutyrate)

STYRALYL FORMATE
(See α-Methylbenzyl formate)

STYRALYL PROPIONATE
(See α-Methylbenzyl propionate)

STYROLENE ACETATE
(See α-Methylbenzyl acetate)

STYRYL CARBINOL
(See Cinnamyl alcohol)

SUCROSE OCTAACETATE

Chemical formula: $(C_{12}H_{14}O_3)(OOCCH_3)_8$

Flavors in which used:
Bitters, spice, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.35, 20

SWEET SPIRIT OF NITRE
(See Ethyl nitrite)

TANNIC ACID

Chemical formula: $C_{76}H_{52}O_{46}$

Flavors in which used:
Butter, caramel, fruit, brandy, maple, nut

Natural food occurrence:
Cherry, wild-bark extract, coffee, tea, yerba santa (fluid extract)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.1, 45
Ice cream, ices	160
Candy	0.20, 100
Baked goods	40
Liquors	1,000, 6.0

TANNIN
(See Tannic acid)

TARTARIC ACID
(d-, l-, dl-, meso-)

Chemical formula: HOOCCHOHCHOHCOOH

Flavors in which used:
Butter, caramel, coconut, coffee, chocolate, cherry, grape, peach, pineapple, rum, walnut, ginger beer

Natural food occurrence:
Coffee, grape juice

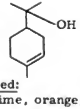
Foods in which used:	Approx. Avg Maximum ppm
Beverages	960
Ice cream, ices	570
Candy	5,400
Baked goods	1,300
Gelatin desserts	60
Condiments	10,000

1,4(8)-TERPADIENE
(See Terpinolene)

4-TERPINENOL
(See 4-Carvomenthenol)

α-TERPINEOL

Chemical formula:



Flavors in which used:
Berry, lemon, lime, orange, lilac, peach. frankfurter, anise, ginger, nutmeg

α-TERPINEOL (cont'd)

Natural food occurrence:
Cardamom, sweet orange, petitgrain, lovage, lemon, lime, marjoram, mace, black-currant buds, grapefruit, strawberries, orange leaf (absolute), orange-peel sweet oil, peels of citrus macrocarpa bunge, laurel-leaves oil, star anise, cassie, erigeron oil, petitgrain oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.4
Ice cream, ices	16
Candy	14
Baked goods	19
Gelatin desserts	12, 16
Chewing gum	40
Condiments	38

TERPINOLENE

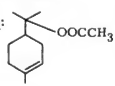
Chemical formula:

Flavors in which used:
Citrus, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	16
Ice cream, ices	64
Candy	0.12, 48
Baked goods	49

TERPINYL ACETATE
Acetic acid, Terpinyl ester

Chemical formula:

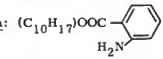


Flavors in which used:
Berry, lime, orange, cherry, peach, plum, meat

Natural food occurrence:
Cardamom

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.5
Ice cream, ices	3.2
Candy	9.9
Baked goods	15
Chewing gum	14, 260
Condiments	15
Meats	1.7, 40

TERPINYL ANTHRANILATE
Anthranilic acid, Terpinyl ester

Chemical formula: $(C_{10}H_{17})OOC$  H_2N

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.1
Ice cream, ices	1.5, 2.6
Candy	6.3
Baked goods	6

TERPINYL BUTYRATE
Butyric acid, Terpinyl ester

Chemical formula: $(C_{10}H_{17})OOC(CH_2)_2CH_3$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6.4
Ice cream, ices	9.2
Candy	11
Baked goods	9.5
Chewing gum	210

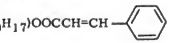
TERPINYL ISOBUTYRATE
Isobutyric acid, Terpinyl ester

Chemical formula: $(C_{10}H_{17})OOCCH(CH_3)_2$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.90, 2.4
Ice cream, ices	5
Candy	4, 15
Baked goods	5, 15

TERPINYL CINNAMATE
Cinnamic acid, Terpinyl ester

Chemical formula: $(C_{10}H_{17})OOCCH{=}CH$ 

Flavors in which used:
Fruit

TERPINYL CINNAMATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50
Ice cream, ices	2.6
Candy	6
Baked goods	6

TERPINYL FORMATE
Formic acid, Terpinyl ester

Chemical formula: $(C_{10}H_{17})OOCH$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50, 3
Ice cream, ices	2.6, 5
Candy	6, 10
Baked goods	6, 10
Liqueurs	1

TERPINYL PROPIONATE
Propionic acid, Terpinyl ester

Chemical formula: $(C_{10}H_{17})OOCCH_2CH_3$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.5
Ice cream, ices	2.6, 3
Candy	6, 10
Baked goods	6, 10

TERPINYL ISOVALERATE
Isovaleric acid, Terpinyl ester

Chemical formula: $(C_{10}H_{17})OOCCH_2CH(CH_3)_2$

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50, 5
Ice cream, ices	2.6, 5
Candy	6, 10
Baked goods	6, 10

TETRADECANAL
(See Myristaldehyde)

TETRADECANOIC ACID
(See Myristic acid)

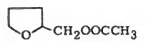
TETRADECYL ALDEHYDE
(See Myristaldehyde)

TETRAHYDRO-2-FURANCARBINOL
(See Tetrahydrofurfuryl alcohol)

TETRAHYDRO-2-FURANMETHANOL
(See Tetrahydrofurfuryl alcohol)

TETRAHYDROFURFURYL ACETATE
Acetic acid, Tetrahydrofurfuryl ester

Chemical formula:

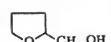


Flavors in which used:
Fruit, honey, maple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2, 1.3
Ice cream, ices	8
Candy	20, 1
Baked goods	20, 1

TETRAHYDROFURFURYL ALCOHOL

Chemical formula:

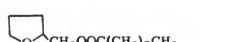


Flavors in which used:
Coffee, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.03, 14
Ice cream, ices	0.03
Candy	0.03, 18
Baked goods	0.04

TETRAHYDROFURFURYL BUTYRATE
Butyric acid, Tetrahydrofurfuryl ester

Chemical formula:



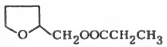
Flavors in which used:
Fruit

TETRAHYDROFURFURYL BUTYRATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.90
Ice cream, ices	6
Candy	15
Baked goods	15

TETRAHYDROFURFURYL PROPIONATE
Propionic acid, Tetrahydrofurfuryl ester

Chemical formula:



Flavors in which used:
Chocolate, honey, maple

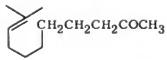
Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3, 2
Ice cream, ices	8
Candy	1, 20
Baked goods	1, 20

TETRAHYDRO-2-FURYLMETHANOL
(See Tetrahydrofurfuryl alcohol)

TETRAHYDROGERANIOL
(See 3,7-Dimethyl-1-octanol)

TETRAHYDRO-pseudo-IONONE

Chemical formula:



Flavors in which used:
Berry, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50
Ice cream, ices	0.60, 2.4
Candy	14
Baked goods	14

TETRAHYDROLINALOOL

Chemical formula:

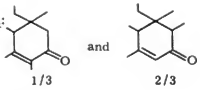
Flavors in which used:
Berry, citrus, fruit, liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	2.7
Candy	5.6
Baked goods	5.6

4-(2,5,6,6-TETRAMETHYL-2-CYCLOHEXEN-1-YL)-3-BUTEN-2-ONE
(See α-Irone)

TETRAMETHYL ETHYLCYCLOHEXENONE
(Mixture of isomers)

Chemical formula:



1/3 and 2/3

Flavors in which used:
Butter, caramel, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5
Ice cream, ices	30
Candy	30
Baked goods	30

TETRYL FORMATE
(See Isobutyl formate)

THEINE
(See Caffeine)

THIBETOLIDE ®
(See ω-Pentadecalactone)

2-THIENYL MERCAPTAN
2-Thienylthiol

Chemical formula:

Flavors in which used:
Coffee

Natural food occurrence:
Coffee

2-THIENYL MERCAPTAN (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Candy	0.10
Baked goods	0.10

THIOALLYL ETHER
(See Allyl sulfide)

THYME CAMPHOR
(See Thymol)

THYMOL

Chemical formula: $(CH_3)_2CH$, CH_3, HO

Flavors in which used:
Citrus, fruit, peppermint, spice

Natural food occurrence:
Dittany of Crete (oil), oil of lavender, origanum oil (extract), thyme

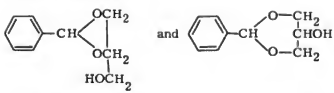
Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.5, 11
Ice cream, ices	44
Candy	9.4
Baked goods	5, 6.5
Chewing gum	100

ISOTHYMOL
(See Carvacrol)

α-TOLUALDEHYDE
(See Phenylacetaldehyde)

TOLUALDEHYDE GLYCERYL ACETAL
(Mixed o-, m-, p-)

Chemical formula:



about 60% and about 40%

Flavors in which used:
Chocolate, fruit, cherry, coconut vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.08, 6
Ice cream, ices	6, 8
Candy	12, 15
Baked goods	12, 15

TOLUALDEHYDES
(Mixed o-, m-, p-)

Chemical formula: CH_3, CHO

Flavors in which used:
Berry, loganberry, fruit, cherry, muscatel, peach, apricot, nut, almond, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	11
Ice cream, ices	16
Candy	25
Baked goods	28
Gelatin desserts	8.3
Chewing gum	430
Maraschino cherries	100

α-TOLUENETHIOL
(See Benzyl mercaptan)

α-TOLUIC ACID
(See Phenylacetic acid)

α-TOLUIC ACID, ETHYL ESTER
(See Ethyl phenylacetate)

α-TOLUIC ALDEHYDE
(See Phenylacetaldehyde)

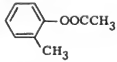
p-TOLYLACETALDEHYDE
p-Methylphenylacetaldehyde

Chemical formula: CH_3, CH_2CHO

Flavors in which used:
Honey, nut

Foods in which used:	Approx. Avg Maximum ppm
Ice cream, ices	2
Candy	0.03, 2
Baked goods	2

o-TOLYL ACETATE
Acetic acid, o-Tolyl ester

Chemical formula: 

Flavors in which used:
Butter, caramel, fruit, cherry, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.8
Ice cream, ices	2.6
Candy	11
Baked goods	9, 10
Gelatin desserts	1
Chewing gum	0.30, 220

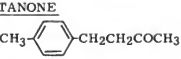
p-TOLYL ACETATE
Acetic acid, p-Tolyl ester

Chemical formula: 

Flavors in which used:
Butter, caramel, fruit, honey, nut, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50, 1
Ice cream, ices	1.3
Candy	4.3
Baked goods	4.4
Chewing gum	0.30, 220
Condiments	10

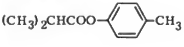
4-(p-TOLYL)-2-BUTANONE

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	1.5
Candy	6
Baked goods	6

p-TOLYL ISOBUTYRATE
Isobutyric acid, p-Tolyl ester

Chemical formula: 

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.10, 4
Ice cream, ices	0.05
Candy	0.12, 6
Baked goods	0.12 7

p-TOLYL DODECANOATE
(See p-Tolyl laurate)

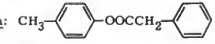
p-TOLYL LAURATE
Dodecanoic acid, p-Tolyl ester

Chemical formula: 

Flavors in which used:
Miscellaneous

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	1
Candy	2
Baked goods	2

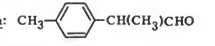
p-TOLYL PHENYLACETATE
Phenylacetic acid, p-Tolyl ester

Chemical formula: 

Flavors in which used:
Butter, caramel fruit, honey, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.6
Ice cream, ices	0.87
Candy	4.8
Baked goods	5.4

2-(p-TOLYL)-PROPIONALDEHYDE
2-(p-Tolyl) propanal)

Chemical formula: 

Flavors in which used:
Caraway

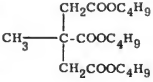
2-(p-TOLYL)-PROPIONALDEHYDE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.13
Ice cream, ices	0.13
Candy	0.13
Baked goods	0.20
Liqueurs	0.005

TONKALIDE
(See γ-Hexalactone)

TRIBUTYL ACETYLCITRATE
Acetylcitric acid, Tributyl ester

Chemical formula:



Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.40

2-TRIDECENAL

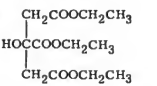
Chemical formula: $CH_3(CH_2)_9CH{=}CHCHO$

Flavors in which used:
Citrus, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.10, 0.30
Ice cream, ices	1.6, 6
Candy	4, 6
Baked goods	4, 6
Chewing gum	0.10

TRIETHYL CITRATE
Citric acid, Triethyl ester

Chemical formula:



Flavors in which used:
Berry, blueberry, butter, butterscotch, citrus, fruit, cherry, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	13
Ice cream, ices	47
Candy	180
Baked goods	230
Gelatin desserts and puddings	10

2,6,6-TRIMETHYLBICYCLO-(3.1.1)-2-HEPTENE
(See α-Pinene)

1-(2,6,6-TRIMETHYL-2-CYCLOHEXENE-1-YL)-1,6-HEPTADIEN-3-ONE
(See Allyl α-ionone)

4-(2,6,6-TRIMETHYL-1-CYCLOHEXEN-1-YL)-3-BUTEN-2-ONE
(See β-Ionone)

4-(2,6,6-TRIMETHYL-2-CYCLOHEXEN-1-YL)-3-BUTEN-2-ONE
(See α-Ionone)

4-(2,6,6-TRIMETHYL-2-CYCLOHEXEN-1-YL)-3-Methyl-3-Buten-2-ONE
(See α-Isomethylionone)

5-(2,6,6-TRIMETHYL-1-CYCLOHEXEN-1-YL)-4-PENTEN-3-ONE
(See Methyl-β-ionone)

5-(2,6,6-TRIMETHYL-2-CYCLOHEXEN-1-YL)-4-PENTEN-3-ONE
(See Methyl-α-ionone)

5-(2,6,6-TRIMETHYL-3-CYCLOHEXEN-1-YL)-4-PENTEN-3-ONE
(See Methyl δ-ionone)

1,3,7-TRIMETHYL-2,6-DIOXOPURINE
(See Caffeine)

3,7,11-TRIMETHYL-1,6,10-DODECATRIEN-3-OL
(See Nerolidol)

3,7,11-TRIMETHYL-2,6,10-DODECATRIEN-1-OL
(See Farnesol)

1,3,3-TRIMETHYL-2-NORBORNANOL
(See Fenchyl alcohol)

d-1,3,3-TRIMETHYL-2-NORBORNANONE
(See d-Fenchone)

1,3,7-TRIMETHYLXANTHINE
(See Caffeine)

2,3-UNDECADIONE

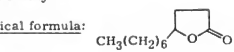
Chemical formula: $CH_3COCO(CH_2)_7CH_3$

Flavors in which used:
Butter

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.5
Ice cream, ices	3
Candy	3
Baked goods	3

γ-UNDECALACTONE
4-Hydroxyundecanoic acid, γ-Lactone
γ-Undecyl lactone
γ-Heptyl butyrolactone
Aldehyde C-14 pure (so-called)
Peach aldehyde

Chemical formula:



Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.4
Ice cream, ices	3
Candy	11
Baked goods	7.1
Gelatin desserts	7.5
Chewing gum	90

UNDECANAL

Chemical formula: $CH_3(CH_2)_9CHO$

Flavors in which used:
Lemon, lime, orange, rose, fruit, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.95
Ice cream, ices	3.1
Candy	2
Baked goods	2.4
Chewing gum	56

1-UNDECANOL
(See Undecyl alcohol)

2-UNDECANONE

Chemical formula: $CH_3CO(CH_2)_8CH_3$

Flavors in which used:
Citrus, coconut, peach, cheese

Natural food occurrence:
Rue, hops oil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.8
Ice cream, ices	0.54
Candy	2.6
Baked goods	3.1
Puddings	5

9-UNDECENAL

Chemical formula: $CH_3CH{=}CH(CH_2)_7CHO$

Flavors in which used:
Citrus, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.8
Ice cream, ices	4.2
Candy	4.5
Baked goods	4.6

10-UNDECENAL

Chemical formula: $CH_2{=}CH(CH_2)_8CHO$

Flavors in which used:
Citrus, floral, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.05, 1
Ice cream, ices	0.20
Candy	0.20

UNDECENYL ACETATE
(See 10-Undecen-1-yl acetate)

10-UNDECEN-1-YL ACETATE
Acetic acid, 10-Undecen-1-yl ester

Chemical formula: $CH_3CH{=}CH(CH_2)_7CH_2OOCCH_3$

Flavors in which used:
Citrus, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.7
Ice cream, ices	15
Candy	12
Baked goods	12

UNDECYL ALCOHOL
1-Undecanol

Chemical formula: $CH_3(CH_2)_9CH_2OH$

Flavors in which used:
Lemon, lime, orange, rose

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.9
Ice cream, ices	15
Candy	12
Baked goods	12

UNDECYLENIACETATE
(See 10-Undecen-1-yl acetate)

UNDECYLENIC ALDEHYDE
(See 9-Undecenal)

UNDECYLIC ALDEHYDE
(See Undecanal)

γ-UNDECYL LACTONE
(See γ-Undecalactone)

VALERAL
(See Valeraldehyde)

ISOVALERAL
(See 3-Methylbutyraldehyde)

VALERALDEHYDE
Pentanal

Chemical formula: $CH_3(CH_2)_3CHO$

Flavors in which used:
Fruit, nut

Natural food occurrence:
Coffee extract

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	5
Candy	4.2
Baked goods	5.4

ISOVALERALDEHYDE
(See 3-Methylbutyraldehyde)

VALERIANIC ACID
(See Isovaleric acid)

VALERIC ACID

Chemical formula: $CH_3(CH_2)_3COOH$

Flavors in which used:
Butter, butterscotch, fruit, rum, cheese

Natural food occurrence:
Apples, cocoa, coffee, oil of lavender, peaches, strawberries

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.2
Ice cream, ices	1.8
Candy	2.5
Baked goods	8

VALERIC ACID (active)
(See Isovaleric acid)

ISOVALERIC ACID

Chemical formula: $(CH_3)_2CHCH_2COOH$

Flavors in which used:
Fruit, rum, cheese, nut

Natural food occurrence:
Bay and bay leaves, coffee, lemons, tea, parsley family, peppermint oil, oil of lavender, oil of lovage

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.2
Ice cream, ices	14
Candy	12
Baked goods	5.5
Cheese	2.4

VALERIC ALDEHYDE
(See Valeraldehyde)

ISOVALERIC ALDEHYDE
(See 3-Methylbutyraldehyde)

γ-VALEROLACTONE
4-Hydroxypentanoic acid, γ-Lactone
3-Methylbutyrolactone
3-Valerolactone

Chemical formula:

Flavors in which used:
Vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4
Ice cream, ices	20
Candy	50
Baked goods	50

3-VALEROLACTONE
(See γ-Valerolactone)

VALIDOL
(Menthyl isovalerate)

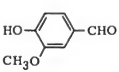
VANAY
(See (tri-) Acetin)

VANILLAL
(See Ethyl vanillin)

VANILLIC ALDEHYDE
(See Vanillin)

VANILLIN

Chemical formula:



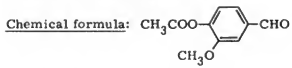
Flavors in which used:
Butter, chocolate, fruit, root beer, vanilla

Natural food occurrence:
Vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	63
Ice cream, ices	95
Candy	200
Baked goods	220
Gelatin desserts and puddings	120
Chewing gum	270
Sirups	20,000, 330
Toppings	150
Margarine	0.20
Chocolate products	970

VANILLIN ACETATE
Acetic acid, Vanillin ester

Chemical formula:



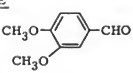
Flavors in which used:
Spice, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	11
Ice cream, ices	11
Candy	28
Baked goods	28

VANILLIN METHYL ETHER
(See Veratraldehyde)

VERATRALDEHYDE

Chemical formula:



Flavors in which used:
Fruit, nut, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	9
Ice cream, ices	9.2
Candy	32
Baked goods	30
Puddings	15

VERATRIC ALDEHYDE
(See Veratraldehyde)

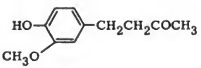
VINEGAR NAPHTHA
(See Ethyl acetate)

p-VINYLGUAIACOL
(See 2-Methoxy-4-vinyl phenol)

VIOLET ALPINE,, OIL
(See 2-Methyl-3-(p-isopropylphenyl) propionaldehyde)

VIRIDINE
(See Phenylacetaldehyde dimethyl acetal)

ZINGERONE

Chemical formula: 

Flavors in which used:
Fruit, root beer, sarsaparilla, spice, ginger ale, wintergreen, birch beer

Natural food occurrence:
Oil of ginger, ginger, oleoresin

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6.9
Ice cream, ices	7.8
Candy	11
Baked goods	11
Chewing gum	15

ZINGIBERONE
(See Zingerone)

GROUP 11

FLAVORING AGENTS

Sub-Group B: Spices, Herbs, Essential Oils, and Plant Extractives

ABSINTHIUM
(See Wormwood)

ABSINTHIUM, EXTRACT
(See Wormwood, extract)

ABSINTHIUM, OIL
(See Wormwood, oil)

AGROPYRUM
(See Doggrass, extract)

ALCANNIN, EXTRACT
(See Alkanet root, extract)

ALFALFA, EXTRACT

Botanical name: Medicago sativa Lindl.

Flavors in which used:
Cola, liquors, maple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	10
Cordials	200

ALKANET ROOT, EXTRACT
Alkannin, extract
Anchusin, extract
Alcannin, extract

Botanical name: Alkanna tinctoria Tausch

Flavors in which used:
Berry, strawberry, fruit, meat

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	3
Candy	10
Baked goods	10
Icings	70
Meats	0.20

ALKANNIN, EXTRACT
(See Alkanet root, extract)

ALLSPICE

Botanical name: Pimenta officinalis Lindl.

Flavors in which used:
Liquor, meat, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	120
Ice cream, ices	2, 1.5
Candy	2
Baked goods	1,400
Chewing gum	40
Condiments	1,000
Meats	670

ALLSPICE, OIL

Botanical name: Pimenta officinalis Lindl.

Flavors in which used:
Berry, cola, peach, rum, sausage, nut, allspice, cinnamon, ginger, nutmeg, egg-nog

Foods in which used:	Approx. Avg Maximum ppm
Beverages	18
Ice cream, ices	15
Candy	66
Baked goods	48
Chewing gum	1,700
Condiments	70
Pickles	29
Meats	110
Liquors	5
Soups	55

ALLSPICE, OLEORESIN

Botanical name: Pimenta officinalis Lindl.

Flavors in which used:
Sausage

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	600
Meat	69
Condiments	25, 130

ALMONDS, BITTER OIL (FFPA)

Botanical name: Prunus amygdalus Batsch var. amara (DC.) Focke

Flavors in which used:
Cherry, almond

Foods in which used:	Approx. Avg Maximum ppm
Beverages	80
Ice cream, ices	66
Candy	97
Baked goods	96
Gelatin desserts	29
Chewing gum	330
Maraschino cherries	340

ALOE EXTRACT

Botanical name: Aloe spp.

Flavors in which used:
Bitters, vermouth, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2,000, 5
Alcoholic beverages	130

ALTHEA ROOT
Marshmallow root

Botanical name: Althaea officinalis L.

Flavors in which used:
Strawberry, cherry, root beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	10, 5.7

AMBERGRIS, TINCTURE

Flavors in which used:
Berry, fruit, rum, spice, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	1.7
Candy	9.7
Baked goods	0.10

AMBREINE, OIL
(See Labdanum, oil)

AMBRETTE, ABSOLUTE, OIL

Botanical name: Hibiscus abelmoschus L.

Flavors in which used:
Berry, floral

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.14
Ice cream, ices	0.22
Candy	0.34
Baked goods	0.34

AMBRETTE, TINCTURE

Botanical name: Hibiscus abelmoschus L.

Flavors in which used:
Black walnut, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5
Ice cream, ices	5, 1
Candy	10, 0.04
Baked goods	10
Cordials	10

AMBRETTE SEED, OIL

Botanical name: Hibiscus abelmoschus L.

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.30
Ice cream, ices	0.30, 0.50
Candy	0.80
Baked goods	0.80

AMYRIS, OIL
Sandalwood, West Indian, oil

Botanical name: Amyris balsamifera L.

Foods in which used:	Approx. Avg Maximum ppm
Chewing gum	18
Candy	58

ANCHUSIN, EXTRACT
(See Alkanet root, extract)

ANGELICA ROOT, EXTRACT

Botanical name: Angelica archangelica L.

Flavors in which used:
Berry, liquor, wine, maple, nut, walnut, root beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	49
Ice cream, ices	46
Candy	44
Baked goods	61
Sirups	1, 100

ANGELICA ROOT, OIL

Botanical name: Angelica archangelica L.

ANGELICA ROOT, OIL (cont'd)

Flavors in which used:
Fruit, gin, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	12
Ice cream, ices	0.99
Candy	0.86
Baked goods	1
Gelatin desserts	5, 0.03
Chewing gum	60
Liquors	15

ANGELICA SEED, EXTRACT

Botanical name: Angelica archangelica L.

Flavors in which used:
Berry, fruit, maple, walnut, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1,100
Candy	19
Baked goods	50
Sirups	100
Condiments	10

ANGELICA SEED, OIL

Botanical name: Angelica archangelica L.

Flavors in which used:
Fruit, gin

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6.3
Ice cream, ices	1.4
Candy	1.9
Baked goods	2.2
Gelatin desserts	5
Liquors	32

ANGELICA STEM, OIL

Botanical name: Angelica archangelica L.

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.5, 0.50
Ice cream, ices	10, 0.50
Candy	25, 1
Baked goods	24, 1
Gelatin desserts	0.5

ANGOSTURA, EXTRACT

Botanical name: Galipea officinalis Hancock

Flavors in which used:
Bitter, liquor, root beer, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	18
Liquors	1,700

ANISE

Botanical name: Pimpinella anisum L.

Flavors in which used:
Licorice, anise, pepperoni, sausage, spice, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	30, 2
Ice cream, ices	4, 1
Candy	4, 3
Baked goods	490
Condiments	96, 5,000
Meats	1,200

ANISE, OIL

Botanical name: Pimpinella anisum L.

Flavors in which used:
Butter, caramel, cherry, licorice, anise, rum, sausage, nut, root beer, sarsaparilla, spice, vanilla, wintergreen, birch beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7.5
Ice cream, ices	67
Candy	500
Baked goods	120
Chewing gum	3,200
Meats	65
Liquors	45

ANISE, STAR

Botanical name: Illicium verum Hook. f.

Flavors in which used:
Fruit, licorice, anise, liquor, sausage, root beer, sarsaparilla, vanilla, wintergreen, birch beer

ANISE, STAR (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	13
Ice cream, ices	18
Candy	83
Baked goods	140
Meats	1,000, 500
Liquors	60, 40

ANISE, STAR, OIL

Botanical name: Illicium verum Hook. f.

Flavors in which used:
Blackberry, peach, licorice, anise, liquor, arrach, meat, root beer, spice, wintergreen, birch beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	12
Ice cream, ices	99
Candy	190
Baked goods	230
Meats	55, 20
Sirups	8.0
Liquors	50

ANNATTO, EXTRACT
Arnotta, extract
Annotta, extract

Botanical name: Bixa orellana L.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	25
Ice cream, ices	200
Baked goods	2,000
Margarine	330
Breakfast cereals	2,000

ANNATTO, SEED
Arnotta, seed
Annotta, seed

Botanical name: Bixa orellana L.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	100

ANNOTTA, EXTRACT
(See Annatto, extract)

ANNOTTA, SEED
(See Annatto, seed)

APRICOT KERNEL, OIL
Persic oil

Botanical name: Prunus armeniaca L.

Flavors in which used:
Cherry

Foods in which used:	Approx. Avg Maximum ppm
Beverages	150, 130
Ice cream, ices	400, 3.4
Candy	360, 300
Baked goods	270
Soups	500, 1

ARHEOL
(See Sandalwood, yellow, oil)

ARNOTTA, EXTRACT
(See Annatto, extract)

ARNOTTA, SEED
(See Annatto, seed)

ASAFETIDA, FLUID EXTRACT

Botanical name: Ferula assafoetida L.

Flavors in which used:
Sausage, onion, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4
Ice cream, ices	10
Candy	5.0
Baked goods	10, 8
Meat	10
Condiments	50
Soups	30

ASAFETIDA, GUM

Botanical name: Ferula assafoetida L.

Flavors in which used:
Onion, spices

ASAFETIDA, GUM (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5
Ice cream, ices	10
Candy	25, 15
Baked goods	15
Seasonings	160, 5

ASAFETIDA, OIL

Botanical name: Ferula assafoetida L.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Candy	15, 1
Baked goods	1
Condiments	10

ASH BARK, PRICKLY, EXTRACT

Botanical name: Xanthoxylum amercanum L. or Xanthoxylum clava-herculis L.

Flavors in which used:
Cola, maple, root beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	59
Candy	78
Baked goods	82

ATTAR OF ROSES
(See Rose, Bulgarian, true otto, oil)

BALM

Botanical name: Melissa officinalis L.

Flavors in which used:
None listed

Foods in which used:
None reported

BALM, LEMON
(See Balm)

BALM, LEMON, EXTRACT
(See Balm leaves, extract)

BALM, LEMON, OIL
(See Melissa, oil)

BALM, OIL

Botanical name: Melissa officinalis L.

Flavors in which used:
Fruit, liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	8.5
Ice cream, ices	1.7
Candy	20
Baked goods	60, 10

BALM LEAVES, EXTRACT

Botanical name: Melissa officinalis L.

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2,000

BALSAM, PERU

Botanical name: Myroxylon pereirae Klotzsch

Flavors in which used:
Strawberry, chocolate, cherry, grape, brandy, rum, maple, walnut, spice, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3
Ice cream, ices	5.9
Candy	10
Baked goods	32
Gelatin desserts	1, 0.05
Chewing gum	120
Sirups	7, 0.25

BALSAM, PERU, OIL

Botanical name: Myroxylon pereirae Klotzsch

Flavors in which used:
Berry, coconut, fruit, rum, maple, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.2
Ice cream, ices	2.2
Candy	8.4
Baked goods	6.6

BALSAM FIR, OIL

Botanical name: Abies balsamea (L.) Mill.

Flavors in which used:
Pineapple, lime, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.5
Ice cream, ices	1.5, 0.50
Candy	5.2
Baked goods	5.2
Gelatin desserts	1, 0.50

BALSAM FIR, OLEORESIN

Botanical name: Abies balsamea (L.) Mill.

Flavors in which used:
Fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.20
Ice cream, ices	1.5
Candy	5
Baked goods	5

BASIL

Botanical name: Ocimum basilicum L.

Flavors in which used:
Sausage, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.5
Ice cream, ices	5
Candy	5
Baked goods	680
Condiments	500
Meats	520

BASIL, OIL

Botanical name: Ocimum basilicum L.

Flavors in which used:
Loganberry, strawberry, orange, rose, violet, cherry, honey, licorice, muscatel, meat, root beer, basil

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	2.7
Candy	6.2
Baked goods	4.2
Gelatin desserts	0.01
Condiments	15
Meats	24

BASIL, OLEORESIN

Botanical name: Ocimum basilicum L.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	16
Condiments	5, 2

BAY, SWEET

Botanical name: Laurus nobilis L.

Flavors in which used:
Vermouth, sausage, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.5, 0.36
Ice cream, ices	5
Candy	5
Baked goods	400, 5
Condiments	130
Meats	840

BAY, SWEET, OIL

Botanical name: Laurus nobilis L.

Flavors in which used:
Fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	1.8
Candy	2.6
Baked goods	21
Chewing gum	2.9
Condiments	30

BAY LEAVES, EXTRACT
(See Bay leaves, West Indian, extract)

BAY LEAVES, OIL
(See Bay leaves, West Indian, oil)

BAY LEAVES, OLEORESIN
(See Bay leaves, West Indian, oleoresin)

BAY LEAVES, WEST INDIAN, EXTRACT

Botanical name: Pimenta acris Kostel

Flavors in which used:
Vermouth, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.67
Ice cream, ices	2
Candy	2, 1.6
Baked goods	2
Meats	54
Soups	0.72

BAY LEAVES, WEST INDIAN, OIL

Botanical name: Pimenta acris, Kostel

Flavors in which used:
Fruit, liquor, bay

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.5
Ice cream, ices	2.3
Candy	4.4
Baked goods	4.6
Condiments	27
Meats	15

BAY LEAVES, WEST INDIAN, OLEORESIN

Botanical name: Pimenta acris Kostel

Flavors in which used:
Sausage

Foods in which used:	Approx. Avg Maximum ppm
Meats	25
Soups	72

BEESWAX, WHITE
Cire d'abeille absolute

Flavors in which used:
Fruit, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.5, 0.50
Ice cream, ices	2
Candy	10
Baked goods	10
Honey	5

BENZOE
(See Benzoin, resin)

BENZOIN, GUM
(See Benzoin, resin)

BENZOIN, RESIN

Botanical name: Styrax benzoin Dryander
S. paralleloneurus Perkins
S. tonkinensis (Pierre)
Craib ex Hartwich, or other
species of the section Anthostyrax
of the genus Styrax

Flavors in which used:
Chocolate, cherry, rum, spice, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	50, 15
Ice cream, ices	13, 5.1
Candy	8.7
Baked goods	20, 26
Gelatin desserts	10
Chewing gum	110

BERGAMOT, OIL

Botanical name: Citrus aurantium L. subsp.
bergamia Wright et Arn.

Flavors in which used:
Strawberry, lemon, orange, tangerine, cola, floral, banana, grape, peach, pear, pineapple, liquor, spice, vanilla, ginger

Foods in which used:	Approx. Avg Maximum ppm
Beverages	8.9
Ice cream, ices	7.9
Candy	27
Baked goods	29
Gelatin desserts	5.3, 90
Chewing gum	43
Icings	1, 130

BERGAMOT ORANGE, OIL
(See Bergamot, oil)

BIRCH, BLACK, OIL
(See Birch, sweet, oil)

BIRCH, SWEET, OIL

Botanical name: Betula lenta L.

Flavors in which used:
Strawberry, pineapple, maple, nut, root beer, sarsaparilla, spice, wintergreen, birch beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	48
Ice cream, ices	44
Candy	310
Baked goods	110
Gelatins and puddings	0.07, 4,300
Sirups	5

BIRCH TAR, OIL, REFINED (RECTIFIED)

Botanical name: Betula pendula Roth and related Betula spp.

Foods in which used:	Approx. Avg Maximum ppm
Chewing gum	.1

BITTER ASH, EXTRACT
(See Quassia, extract)

BITTER WOOD, EXTRACT
(See Quassia, extract)

BLACKBERRY BARK, EXTRACT

Botanical name: Rubus, species of section Eubatus

Flavors in which used:
Berry, pineapple, grenadine, root beer, sarsaparilla, wintergreen, birch beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	81
Ice cream, ices	880, 3
Candy	230
Baked goods	660, 3
Liquors	150, 10,000

BLACK CUTCH, EXTRACT
(See Catechu, extract)

BLACKTHORN BERRIES
(See Sloe berries)

BLACKTHORN BERRIES, EXTRACT
(See Sloe berries, extract)

BOIS DE ROSE, OIL

Botanical name: Aniba rosaeodora Ducke

Flavors in which used:
Citrus, floral, fruit, meat, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.5, 0.65
Ice cream, ices	10, 2.6
Candy	25, 6.7
Baked goods	25, 9.3
Chewing gum	35

BORONIA, ABSOLUTE

Botanical name: Boronia megastigma Nees

Flavors in which used:
Violet, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.3
Ice cream, ices	2.8
Candy	11
Baked goods	10

BROOM, EXTRACT
(See Genet, extract)

BUCHU LEAVES, OIL

Botanical name: Barosma betulina Bartl. et Wendl.
B. crenulata (L.) Hook.
B. serratifolia Willd.

Flavors in which used:
Berry, fruit, chocolate, mint, spices

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.9
Ice cream, ices	6.8
Candy	8.5
Baked goods	5.2
Condiments	7
Liquors	0.50

BUTTER STARTER DISTILLATE

Flavors in which used:
Butter

BUTTER STARTER DISTILLATE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Ice cream, ices	20, 40
Candy	420
Baked goods	720
Shortening	750, 12,000

CACHOU, EXTRACT
(See Catechu, extract)

CACTUS ROOT, EXTRACT
(See Yucca, Mohave, extract)

CAJEPUT, OIL

Botanical name: Melaleuca leucadendron L.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2, 0.50
Ice cream, ices	1
Candy	13
Baked goods	11

CALAMUS

Botanical name: Acorus calamus L.

Flavors in which used:
Bitters, vermouth, root beer, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	200, 5
Candy	10
Baked goods	15
Ice cream, ices	1
Cordials	30
Bitters	3,000

CALAMUS, OIL

Botanical name: Acorus calamus L.

Flavors in which used:
Chocolate, fruit, benedictine, chartreuse, nut, root beer, sarsaparilla, spice, ginger ale, vanilla, wintergreen, birch beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	8, 2
Ice cream, ices	5, 1.5
Candy	10, 3
Baked goods	15, 3.8
Gelatins and puddings	0.02
Liquors	15, 5

CALENDULA
(See Marigold, pot)

CAMPHOR, JAPANESE, WHITE, OIL

Botanical name: Cinnamomum camphora (L.) Nees et Eberm.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.4
Baked goods	48, 1.6
Condiments	15

CANANGA, OIL

Botanical name: Cananga odorata Hook. f. and Thoms.

Flavors in which used:
Cola, fruit, spice, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7
Ice cream, ices	1
Candy	2
Baked goods	2

CAPSICUM, EXTRACT

Botanical name: Capsicum frutescens L.
C. annuum L.

Flavors in which used:
Spice, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	120
Ice cream, ices	15
Candy	12
Baked goods	14, 12
Meats	200
Sauces	100, 50

CAPSICUM, OLEORESIN

Botanical name: Capsicum frutescens L.
C. annuum L.

Flavors in which used:
Sausage, spice, ginger ale, cinnamon

Foods in which used:	Approx. Avg Maximum ppm
Beverages	14
Candy	11
Baked goods	14
Chewing gum	46
Meats	100, 50
Condiments	92

CARAWAY

Botanical name: Carum carvi L.

Flavors in which used:
Liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	63
Ice cream, ices	63
Baked goods	10,000, 3,000
Condiments	96

CARAWAY, BLACK

Botanical name: Nigella sativa L.

Flavors in which used:
None listed

Foods in which used:
None reported

CARAWAY, OIL

Botanical name: Carum carvi L.

Flavors in which used:
Grape, licorice, anisette, kummel, liver, sausage, mint, caraway, rye

Foods in which used:	Approx. Avg Maximum ppm
Beverages	29
Ice cream, ices	49
Candy	86
Baked goods	150
Chewing gum	0.80
Meats	34
Condiments	38
Liquors	140

CARDAMOM

Botanical name: Eletteria cardamomum (L.) Maton

Flavors in which used:
Bitters, chocolate, liquor, spice, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3
Ice cream, ices	2
Candy	2
Baked goods	1,700
Meats	570
Condiments	900

CARDAMOM SEED, OIL

Botanical name: Eletteria cardamomum (L.) Maton

Flavors in which used:
Chocolate, cocoa, coffee, cherry, liquor, liver, sausage, root beer, sarsaparilla, cardamom, ginger ale, vanilla, cream soda

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.9
Ice cream, ices	1.3
Candy	5.8
Baked goods	57
Chewing gum	2.2
Meats	36
Condiments	8
Liquors	10
Pickles	16, 10

CAROB BEAN, EXTRACT

Botanical name: Ceratonia siliqua L.

Flavors in which used:
Raspberry, bitters, butter, butterscotch, caramel, chocolate, cherry, brandy, wine, maple, root beer, spice, vanilla, cream soda, grape

Foods in which used:	Approx. Avg Maximum ppm
Beverages	66
Ice cream, ices	93
Candy	180
Baked goods	120
Gelatin desserts	600
Icings and toppings	1,000, 500

CARROT, OIL

Botanical name: Daucus carota L.

Flavors in which used:
Violet, fruit, rum, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.1
Ice cream, ices	5.5
Candy	5.1
Baked goods	4.4
Gelatins and puddings	0.02
Condiments	15
Soups	1

CASCARA, BITTERLESS, EXTRACT

Botanical name: Rhamnus purshiana DC.

Flavors in which used:
Butter, caramel, maple, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	100
Ice cream, ices	50
Baked goods	100

CASCARILLA BARK, EXTRACT

Botanical name: Croton cascarilla Benn.
C. eluteria Benn.

Flavors in which used:
Bitters, spice, tobacco

Foods in which used:	Approx. Avg Maximum ppm
Beverages	800, 5

CASCARILLA BARK, OIL

Botanical name: Croton cascarilla Benn.

Flavors in which used:
Cola, fruit, root beer, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.3
Ice cream, ices	3
Candy	8.7
Baked goods	13
Condiments	50

CASHOO, EXTRACT
(See Catechu, extract)

CASSIA

Botanical name: Cinnamomum cassia Blume

Flavors in which used:
Bitters, fruit, liquor, meat, root beer, sarsaparilla, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	9.2
Ice cream, ices	5.1
Candy	130
Baked goods	3,000

CASSIA BARK, EXTRACT

Botanical name: Cinnamomum cassia Blume

Flavors in which used:
Cola, root beer, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	310
Ice cream, ices	10
Candy	10
Baked goods	10

CASSIA BARK, OIL

Botanical name: Cinnamomum cassia Blume

Flavors in which used:
Berry, butter, chocolate, lemon, coffee, cola, cherry, peach, rum, peppermint, pecan, root beer, cassia, ginger ale, cinnamon

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3
Ice cream, ices	11
Candy	150
Baked goods	73
Chewing gum	1,900
Meats	290
Condiments	140

CASSIA BUDS

Botanical name: Cinnamomum cassia Blume

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1,000

CASSIA FLOWERS

(See Cassia buds)

CASSIE, ABSOLUTE

Botanical name: Acacia farnesiana (L.) Willd.

Flavors in which used:
Blackberry, violet, vermouth, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.96
Ice cream, ices	1.2
Candy	4.1
Baked goods	4.1
Gelatin desserts	1

CASSIS
(See Currant buds, black, absolute)

CASTOR, OIL
Ricinus, oil
Palma Christi, oil
Tangan-tangan, oil

Botanical name: Ricinus communis L.

Flavors in which used:
Butter, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.5, 140
Ice cream, ices	3, 540
Candy	3, 410
Baked goods	210

CASTOREUM, EXTRACT

Botanical name: Castor fiber L.
C. canadensis Kuhl

Flavors in which used:
Gooseberry, raspberry, tutti fruiti, rum, wine, black walnut, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5
Ice cream, ices	5.6
Candy	12
Baked goods	41
Chewing gum	400
Condiments	50
Toppings	2

CASTOREUM, LIQUID

Botanical name: Castor fiber L.
C. canadensis Kuhl

Flavors in which used:
Loganberry, raspberry, orange, balsam, rose, violet, cherry, grape, honey, rum, muscatel, whisky, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.2
Ice cream, ices	1.9
Candy	4.9
Baked goods	7.3
Gelatin desserts	2, 1.2
Chewing gum	60, 19
Toppings	2

CATECHU, EXTRACT

Botanical name: Acacia catechu Willd.

Flavors in which used:
Bitters, fruit, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	16
Ice cream, ices	21
Candy	140
Baked goods	140

CATECHU, POWDER

Botanical name: Acacia catechu, Willd.

Flavors in which used:
Fruit, rum, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	45
Ice cream, ices	27
Candy	43
Baked goods	37
Chewing gum	15

CAYENNE

Botanical name: Capsicum annuum L. var. longum Sendt

Flavors in which used:
Sausage, pepper

CAYENNE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	2
Candy	2
Baked goods	50, 2
Condiments	610
Meats	910
Soups	100

CEDAR LEAF, OIL

Botanical name: Thuja occidentalis L.

Flavors in which used:
Fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50, 0.01
Ice cream, ices	1, 0.01
Candy	12
Baked goods	20, 1
Meats	15
Liqueurs	16

CEDRO, OIL
(See Lemon, oil, terpeneless)

CELERY SEED

Botanical name: Apium graveolens L.

Flavors in which used:
Sausage, celery

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1,000, 0.37
Baked goods	1,800
Condiments	2,500
Meats	1,400
Soups	500, 37
Pickles	590, 13

CELERY SEED, EXTRACT

Botanical name: Apium graveolens L.

Flavors in which used:
Celery, meat, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	400, 240
Ice cream, ices	5
Candy	10
Baked goods	1,900
Condiments	10
Meats	100
Soups	500, 160

CELERY SEED, EXTRACT SOLID

Botanical name: Apium graveolens L.

Flavors in which used:
Celery, maple, meat, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	150
Candy	8
Baked goods	12
Condiments	7
Maple sirup	10

CELERY SEED, OIL

Botanical name: Apium graveolens L.

Flavors in which used:
Fruit, honey, maple, sausage, nut, root beer, spice, vanilla, cream soda

Foods in which used:	Approx. Avg Maximum ppm
Beverages	11
Ice cream, ices	13, 3
Candy	13
Baked goods	13
Chewing gum	28
Condiments	40
Meats	40
Soups	1
Pickles	10, 35

CEYLON CINNAMON
(See Cinnamon)

CEYLON CINNAMON LEAF, OIL
(See Cinnamon leaf, oil)

CHAMOMILE FLOWER, ENGLISH, OIL

Botanical name: Anthemis nobilis L.

Flavors in which used:
Chocolate, fruit, liquor

CHAMOMILE FLOWER, ENGLISH, OIL (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.1
Ice cream, ices	0.50, 0.10
Candy	5, 1.3
Baked goods	5, 0.10

CHAMOMILE FLOWER, HUNGARIAN, OIL

Botanical name: Matricaria chamomilla L.

Flavors in which used:
Chocolate, fruit, liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.6
Ice cream, ices	6.1
Candy	3.8
Baked goods	6.5
Chewing gum	0.80
Liquors	1.0

CHAMOMILE FLOWER, ROMAN, EXTRACT

Botanical name: Anthemis nobilis L.

Flavors in which used:
Berry, fruit, vermouth, maple, spice, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	13
Ice cream, ices	9.3
Candy	6.7
Baked goods	16

CHAMOMILE FLOWER, ROMAN, OIL

Botanical name: Anthemis nobilis L.

Flavors in which used:
Chocolate, fruit, vermouth, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7.5, 2.3
Ice cream, ices	11, 3.3
Candy	12, 4.3
Baked goods	8, 4.3
Gelatin desserts	0.25
Liquors	20

CHECKERBERRY, EXTRACT
(See Wintergreen, extract)

CHECKERBERRY, OIL
(See Wintergreen, oil)

CHERRY BARK, WILD, EXTRACT

Botanical name: Prunus serotina Ehrh.

Flavors in which used:
Berry, chocolate, cola, cherry, peach, wild cherry, liquor, nut, root beer, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	120
Ice cream, ices	140
Candy	200
Baked goods	76
Gelatins and puddings	3.5
Sirups	30
Liquors	800, 300

CHERRY LAUREL, OIL (FFPA)

Botanical name: Prunus laurocerasus L.

Flavors in which used:
Fruit, nut

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	75
Maraschino cherries	77
Extracts	50, 65

CHERRY PITS, EXTRACT

Botanical name: Prunus avium L. (sweet cherry)
P. cerasus L. (sour cherry)

Flavors in which used:
Cherry

Foods in which used:	Approx. Avg Maximum ppm
Beverages	150, 80
Ice cream, ices	60, 50

CHERVIL

Botanical name: Anthriscus cerefolium (L.) Hoffm.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	100
Ice cream, ices	50

CHERVIL (cont'd)

Foods in which used (cont'd):	Approx. Avg Maximum ppm
Baked goods	150
Condiments	60

CHICORY, EXTRACT

Botanical name: Cichorium intybus L.

Flavors in which used:
Butter, caramel, chocolate, coffee, maple, nut, root beer, sarsaparilla, vanilla, wintergreen, birch beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	63
Ice cream, ices	58
Candy	57
Baked goods	100

CHINA BARK, EXTRACT
(See Quillaia)

CHINESE CINNAMON
(See Cinnamon)

CHINESE CINNAMON LEAF, OIL
(See Cinnamon leaf, oil)

CINCHONA, EXTRACT
Quinine, extract

Botanical name: Cinchona ledgeriana Moens et Trimen
C. succirubra Pavon et Klotzsch or its hybrids
C. calisaya Wedd.
Or hybrids of these with other spp. of Cinchona

Flavors in which used:
Bitters, liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	10
Candy	1

CINCHONA BARK, RED

Botanical name: Cinchona succirubra Pav. or its hybrids

Flavors in which used:
Bitters, fruit, rum, vermouth, spices

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.7, 1.5
Ice cream, ices	3
Candy	3
Baked goods	27
Liquors	20, 300
Bitters	1,000

CINCHONA BARK, RED, EXTRACT

Botanical name: Cinchona succirubra Pav. or its hybrids

Flavors in which used:
Bitters, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	100
Ice cream, ices	25
Baked goods	20
Condiments	60

CINCHONA BARK, YELLOW

Botanical name: Cinchona ledgeriana Moens
C. calisaya Wedd.
Or hybrids of these with other spp. of Cinchona

Flavors in which used:
Bitters, fruit, vermouth

Foods in which used:	Approx. Avg Maximum ppm
Liquor	300
Bitters	100

CINCHONA BARK, YELLOW, EXTRACT

Botanical name: Cinchona ledgeriana Moens
C. calisaya Wedd.
Or hybrids of these with other spp. of Cinchona

Flavors in which used:
Bitters

Foods in which used:	Approx. Avg Maximum ppm
Beverages	100

CINNAMON

Botanical name: Cinnamomum zeylanicum Nees
C. loureirii Blume
C. cassia Blume

Flavors in which used:
Bitters, cola, apple, plum, vermouth, sausage, eggnog, cinnamon, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.6
Ice cream, ices	53
Candy	4,000, 10
Baked goods	1,900
Condiments	110
Meats	880
Apple butter	450, 78

CINNAMON BARK, EXTRACT

Botanical name: Cinnamomum zeylanicum Nees
C. loureirii Blume
C. cassia Blume

Flavors in which used:
Cola, eggnog, root beer, cinnamon, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	10, 13
Ice cream, ices	8.5
Baked goods	170
Condiments	200, 40
Meats	40

CINNAMON BARK, OIL

Botanical name: Cinnamomum zeylanicum Nees
C. loureirii Blume
C. cassia Blume

Flavors in which used:
Berry, cola, cherry, rum, root beer, cinnamon, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.1
Ice cream, ices	18
Candy	80
Baked goods	110
Chewing gum	620
Condiments	25
Meats	50

CINNAMON FLOWERS
(See Cassia buds)

CINNAMON LEAF, OIL

Botanical name: Cinnamomum zeylanicum Nees
C. loureirii Blume
C. cassia Blume

Flavors in which used:
Cola, apricot, rum, root beer, cinnamon, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6.8
Ice cream, ices	3.4
Candy	32
Baked goods	54
Chewing gum	160, 520
Gelatin desserts	0.20
Condiments	20, 78
Pickles	48, 32
Sliced fruits	3

CIRE D'ABEILLE ABSOLUTE
(See Beeswax, white)

CITRONELLA, OIL

Botanical name: Cymbopogon nardus Rendle

Flavors in which used:
Citrus, fruit, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	17
Ice cream, ices	26
Candy	25
Baked goods	31

CITRUS PEELS, EXTRACT

Botanical name: Citrus species

Flavors in which used:
Bitters, lemon, lime, orange, vermouth, root beer, ginger

Foods in which used:	Approx. Avg Maximum ppm
Beverages	190
Ice cream, ices	420
Candy	480
Baked goods	480

CIVET, ABSOLUTE

Derivation: Civet cats: Viverra civetta Schreber
V. zibetha Schreber

CIVET, ABSOLUTE (cont'd)

Flavors in which used:
Raspberry, butter, caramel, grape, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	3
Candy	3.7
Baked goods	2.8
Gelatin desserts	0.10
Chewing gum	2.2

CLARY

Botanical name: Salvia sclarea L.

Flavors in which used:
Vermouth, spice

Foods in which used:	Approx. Avg Maximum ppm
Vermouth	500

CLARY, OIL

Botanical name: Salvia sclarea L.

Flavors in which used:
Butter, black cherry, grape, licorice, vermouth, wine, root beer, birch beer, spice, vanilla, cream soda

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.8
Ice cream, ices	3.9
Candy	5.3
Baked goods	13
Condiments	20
Vermouth	100

CLARY SAGE
(See Clary)

CLARY SAGE, OIL
(See Clary, oil)

CLOVE BUD, EXTRACT

Botanical name: Eugenia caryophyllata Thunb. (Eugenia aromatica (L.) Baill.)

Flavors in which used:
Berry, fruit, meat, root beer, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	16
Ice cream, ices	19
Candy	20, 2
Baked goods	48
Condiments	150
Meats	250, 160

CLOVE BUD, OIL

Botanical name: Eugenia caryophyllata Thunb. (Eugenia aromatica (L.) Baill.)

Flavors in which used:
Raspberry, coffee, cola, banana, cherry, peach, plum, rum, sausage, eggnog, pecan, root beer, sassafras, cinnamon, ginger, wintergreen, birch beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.1
Ice cream, ices	13
Candy	320
Baked goods	37
Gelatin desserts	5, 0.33
Chewing gum	1,800
Condiments	55
Meats	75
Liquors	300
Spiced fruits	830
Jelly	7.3

CLOVE BUD, OLEORESIN

Botanical name: Eugenia caryophyllata Thunb. (Eugenia aromatica (L.) Baill.)

Flavors in which used:
Fruit, meat, spice

Foods in which used:	Approx. Avg Maximum ppm
Meats	100

CLOVE LEAF, OIL

Botanical name: Eugenia caryophyllata Thunb. (Eugenia aromatica (L.) Baill.)

Flavors in which used:
Loganberry, cherry, root beer, sarsaparilla, cinnamon

Foods in which used:	Approx. Avg Maximum ppm
Beverages	8.6
Ice cream, ices	16

CLOVE LEAF, OIL (cont'd)

Foods in which used (cont'd):	Approx. Avg Maximum ppm
Candy	22
Baked goods	30
Gelatin desserts	5
Condiments	40, 14
Meats	670
Pickles	16, 7
Apple butter	2

CLOVER TOPS, RED, EXTRACT SOLID

Botanical name: Trifolium pratense L.

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	3
Candy	20
Baked goods	9

CLOVES

Botanical name: Eugenia caryophyllata Thunb. (Eugenia aromatica (L.) Baill.)

Flavors in which used:
Bitters, apple, cherry, plum, vermouth, sausage

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1,000, 20
Ice cream, ices	33
Baked goods	1,200
Meats	810
Spiced cherries	500

CLOVE STEM, OIL

Botanical name: Eugenia caryophyllata Thunb. (Eugenia aromatica (L.) Baill.)

Flavors in which used:
Berry, cherry, root beer, ginger ale, ginger beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.9
Ice cream, ices	7, 4
Candy	91
Baked goods	64
Condiments	30, 70

COCA LEAF, EXTRACT (DECOCAINIZED)

Botanical name: Erythroxylon coca Lam.

Flavors in which used:
Bitters, cola

Foods in which used:	Approx. Avg Maximum ppm
Beverages	200
Ice cream, ices	540
Candy	400

COGNAC, GREEN, OIL

Constituents: Ethyl caprate, amyl caprate, ethyl caprylate, amyl caprylate, amyl alcohol, propyl alcohol, isobutyl alcohol, furfuryl alcohol

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.1
Ice cream, ices	8.2
Candy	12
Baked goods	14
Chewing gum	56
Condiments	1
Liquors	400

COGNAC, WHITE, OIL

Constituents: Same as Cognac, Green, Oil

Flavors in which used:
Berry, cherry, grape, brandy, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.6
Ice cream, ices	14
Candy	18
Baked goods	24
Gelatin desserts	0.10

CORIANDER

Botanical name: Coriandrum sativum L.

Flavors in which used:
Raspberry, bitters, fruit, meat, spice, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	7.4
Ice cream, ices	1
Candy	20, 1.0
Baked goods	880

CORIANDER (cont'd)

Foods in which used (cont'd):	Approx. Avg Maximum ppm
Condiments	54
Meats	1,300
Liquors	1,000

CORIANDER, OIL

Botanical name: Coriandrum sativum L.

Flavors in which used:
Blackberry, raspberry, chocolate, coffee, cola, fruit, liquor, sausage, root beer, spice, ginger ale, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.1
Ice cream, ices	4.5
Candy	8.8
Baked goods	9.3
Chewing gum	7.4
Condiments	12
Meats	47
Liquors	30, 10

CORN SILK

Botanical name: Zea mays L.

Flavors in which used:
Maple, nut, root beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	16, 28
Ice cream, ices	10, 5.5
Candy	18, 12
Baked goods	21, 12

COSTUS ROOT, OIL

Botanical name: Saussurea lappa Clarke (Aplotaxis lappa Dec., A. auriculata DC., Aucklandia costus Falc.)

Flavors in which used:
Fruit, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.08
Ice cream, ices	0.90
Candy	1.9
Baked goods	1.2
Gelatin desserts	0.10

COUCH GRASS
(See Doggrass, extract)

CRETAN DITTANY
(See Dittany of Crete)

CROCUS, EXTRACT
(See Saffron, extract)

CUBEBS

Botanical name: Piper cubeba L. f.

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	800

CUBEBS, OIL

Botanical name: Piper cubeba L. f.

Flavors in which used:
Berry, fruit, ginger

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.4
Ice cream, ices	0.25
Candy	1.8
Baked goods	4.6
Condiments	33
Meats	30, 25

CUMIN

Botanical name: Cuminum cyminum L.

Flavors in which used:
Sausage, spice

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	2,500
Condiments	3,900, 300
Meats	1,000

CUMIN, BLACK

Botanical name: Nigella sativa L.

Flavors in which used:
None listed

CUMIN, BLACK (cont'd)

Foods in which used:
None reported

CUMIN, OIL

Botanical name: Cuminum cyminum L.

Flavors in which used:
Berry, fruit, sausage, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.48
Ice cream, ices	0.66
Candy	7.3
Baked goods	10
Chewing gum	0.20
Condiments	230
Meats	100, 40
Pickles	40

CURACAO PEEL, EXTRACT

Botanical name: Citrus aurantium L.

Flavors in which used:
Orange, liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1,700

CURACAO PEEL, OIL

Botanical name: Citrus aurantium L.

Flavors in which used:
Berry, lime, orange, liquors

Foods in which used:	Approx. Avg Maximum ppm
Beverages	33
Ice cream, ices	0.80
Candy	43
Baked goods	100, 4

CURRANT BUDS, BLACK, ABSOLUTE

Botanical name: Ribes nigrum L.

Flavors in which used:
Fruit, berry, raspberry

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.5
Ice cream, ices	8
Candy	20
Baked goods	20

DANDELION, FLUID EXTRACT

Botanical name: Taraxacum officinale Weber
Taraxacum erythrospermum Andrz.

Flavors in which used:
Butter, caramel, fruit, maple, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	35
Ice cream, ices	6
Candy	8, 2
Baked goods	53

DANDELION ROOT, EXTRACT SOLID

Botanical name: Taraxacum officinale Weber
Taraxacum erythrospermum Andrz.

Flavors in which used:
Bitters, butter, caramel, floral, fruit, root beer, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	10
Ice cream, ices	2.5, 20
Candy	40, 8
Baked goods	27

DAVANA, OIL

Botanical name: Artemisia pallens Wall.

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3
Ice cream, ices	6.5
Candy	8
Baked goods	11
Chewing gum	5

DILL

Botanical name: Anethum graveolens L.

Flavors in which used:
Sausage, spice

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	4,800
Condiments	1,400
Meats	1,200
Pickles	8,200

DILL, OIL

Botanical name: Anethum graveolens L.

Flavors in which used:
Strawberry, fruit, sausage, dill

DILL, OIL (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.6
Ice cream, ices	5.8
Candy	9.9
Baked goods	5
Gelatin desserts	20
Chewing gum	8, 3.8
Condiments	150
Meats	51
Liquors	5
Pickles	140

DILL SEED, INDIAN

Botanical name: Anethum sowa Roxb. (Peucedanum graveolens Benth. et Hook.; A. graveolens L.)

Flavors in which used:
Rye

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	400
Condiments	200
Meats	100, 3.3

DITTANY OF CRETE

Botanical name: Origanum dictamnus L.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	25
Baked goods	8.8

DOGGRASS, EXTRACT

Botanical name: Agropyron repens (L.) Beauv.

Flavors in which used:
Maple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	4
Candy	6
Baked goods	6

DRACO RUBIN, EXTRACT
(See Dragon's blood, extract)

DRAGON'S BLOOD, EXTRACT

Botanical name: Daemonorops spp. or other botanical sources

Flavors in which used:
Bitters

Foods in which used:	Approx. Avg Maximum ppm
Beverages	300

DULSE

Botanical name: Rhodymenia palmata (L.) Grev.

Flavors in which used:
None listed

Foods in which used:
None reported

ELDER FLOWERS

Botanical name: Sambucus canadensis L. S. nigra L.

Flavors in which used:
Fruit, wine, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	340
Ice cream, ices	1
Candy	1
Baked goods	1
Wine	25

ELEMI, GUM

Botanical name: Canarium commune L. C. luzonicum (Miq.) A. Gray

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.13
Ice cream, ices	0.25
Candy	0.25
Baked goods	0.25

ELEMI, OIL

Botanical name: Canarium commune L. C. luzonicum (Miq.) A. Gray

ELEMI, OIL (cont'd)

Flavors in which used:
Citrus, fruit, vermouth, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.71
Ice cream, ices	5, 0.25
Candy	15, 0.25
Baked goods	7.5
Soups	10

ERIGERON, OIL

Botanical name: Erigeron canadensis L.

Flavors in which used:
Fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.8, 0.13
Ice cream, ices	3.5, 0.25
Candy	30, 0.25
Baked goods	1, 0.25
Sauce	2

ESTRAGON, OIL

Botanical name: Artemisia dracunculus L.

Flavors in which used:
Fruit, licorice, liquor, root beer, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.79
Ice cream, ices	0.70, 0.50
Candy	0.85
Baked goods	17
Condiments	26
Meats	40
Liquors	3, 1

EUCALYPTUS, OIL

Botanical name: Eucalyptus globulus Labille

Flavors in which used:
Fruit, mint, root beer, spice, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.7
Ice cream, ices	50, 0.50
Candy	76
Baked goods	130
Liquors	10

FENNEL, COMMON

Botanical name: Foeniculum vulgare Mill.

Flavors in which used:
Sausage, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	800
Baked goods	300, 6,500
Condiments	50
Meats	2,400

FENNEL, SWEET

Botanical name: Foeniculum vulgare Mill. var. dulce (DC.) Alef.

Flavors in which used:
Sausage, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	11
Ice cream, ices	44
Candy	33
Baked goods	33
Meats	40, 300

FENNEL, SWEET, OIL

Botanical name: Foeniculum vulgare Mill. var. dulce (DC.) Alef.

Flavors in which used:
Raspberry, fruit, licorice, anise, rye, sausage, root beer, sarsaparilla, spice, wintergreen, birch beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.9
Ice cream, ices	0.38
Candy	22
Baked goods	19
Gelatin desserts	0.10, 10
Condiments	2
Meats	40, 100
Liquors	10, 20

FENUGREEK

Botanical name: Trigonella foenum - graecum L.

Flavors in which used:
Butter, butterscotch, maple, black walnut, spice

FENUGREEK (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	470
Ice cream, ices	15, 560
Candy	600
Baked goods	570
Condiments	420, 800
Meats	250
Sirups	450

FENUGREEK, EXTRACT

Botanical name: Trigonella foenum - graecum L.

Flavors in which used:
Butter, butterscotch, caramel, chocolate, coffee, fruit, maple, meat, black walnut, walnut, root beer, spice, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	50
Ice cream, ices	85
Candy	280
Baked goods	99
Puddings	30
Chewing gum	7.6
Condiments	150
Meats	0.40, 0.60
Sirups	170
Pickles	90
Liquors	20
Icings	37

FENUGREEK, OLEORESIN

Botanical name: Trigonella foenum - graecum L.

Flavors in which used:
Fruit, maple, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	290
Ice cream, ices	72
Candy	90
Baked goods	72
Puddings	500
Sirups	300

FINOCHIO
(See Fennel, sweet)

FLEABANE, OIL
(See Erigeron, oil)

FLORENCE FENNEL
(See Fennel, sweet)

FRANKINCENSE
(See Olibanum, oil)

GALANGAL ROOT

Botanical name: Alpinia officinarum Hance
A. galanga Willd.

Flavors in which used:
Bitters, vermouth, spice, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	750

GALANGAL ROOT, EXTRACT

Botanical name: Alpinia officinarum Hance
A. galanga Willd.

Flavors in which used:
Bitters, fruit, liquor, spice, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.10
Ice cream, ices	0.30
Candy	0.20
Baked goods	0.10
Bitters	80
Liquors	350

GALANGAL ROOT, OIL

Botanical name: Alpinia officinarum Hance
A. galanga Willd.

Flavors in which used:
Fruit, liquor, spice, ginger

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.27
Ice cream, ices	0.40
Candy	1.5
Baked goods	2.3
Condiments	2
Liquors	1

GALBANUM, OIL

Botanical name: Ferula galbaniflua Boiss. et Buhse and other Ferula species

GALBANUM, OIL (cont'd)

Flavors in which used:
Fruit, nut, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.16
Ice cream, ices	0.84
Candy	1.7
Baked goods	1.8

GALBANUM, RESIN

Botanical name: Ferula galbaniflua Boiss. et Buhse and other Ferula species

Flavors in which used:
Berry, fruit, nut, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.04, 0.25
Ice cream, ices	0.05, 0.50
Candy	1.7
Baked goods	2.4
Condiments	50

GAMBIR, GUM
(See Catechu, powder)

GAMBIR CATECHU
(See Catechu, powder)

GARDEN ROSEMARY, OIL
(See Rosemary, oil)

GARLIC, OIL

Botanical name: Allium sativum L.

Flavors in which used:
Fruit, garlic

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.01, 0.03
Ice cream, ices	0.04
Candy	2.9
Baked goods	6
Chewing gum	12
Condiments	16

GENET, ABSOLUTE

Botanical name: Spartium junceum L.

Flavors in which used:
Fruit, honey

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.83
Ice cream, ices	0.50, 1
Candy	1.7
Baked goods	1, 2
Chewing gum	12

GENET, EXTRACT

Botanical name: Spartium junceum L.

Flavors in which used:
Raspberry, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.4

GENTIAN ROOT, EXTRACT

Botanical name: Gentiana lutea L.

Flavors in which used:
Angostura, chocolate, cola, fruit, vermouth, maple, root beer, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	26
Ice cream, ices	47
Candy	120
Baked goods	160
Liqueurs	13

GERANIUM, ROSE, OIL

Botanical name: Pelargonium graveolens L'Her.

Flavors in which used:
Strawberry, lemon, cola, geranium, rose, violet, cherry, honey, rum, brandy, cognac, nut, vanilla, spice, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.6
Ice cream, ices	2.8
Candy	6.9
Baked goods	8.1
Gelatin dessert	1.1, 2
Chewing gum	210
Jelly	5.2

GHATTI, GUM

Botanical name: Anogeissus latifolia Wall.

Flavors in which used:
Butter, butterscotch, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2,100
Ice cream, ices	800

GINGER

Botanical name: Zingiber officinale Rosc.

Flavors in which used:
Apple, plum, sausage, eggnog, pumpkin, ginger, ginger ale, ginger beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	44
Ice cream, ices	220
Baked goods	2,500
Meats	1,500

GINGER, EXTRACT

Botanical name: Zingiber officinale Rosc.

Flavors in which used:
Cola, sausage, root beer, ginger, ginger ale, ginger beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	65
Ice cream, ices	43
Candy	83
Baked goods	100
Condiments	15
Meats	56

GINGER, OIL

Botanical name: Zingiber officinale Rosc.

Flavors in which used:
Root beer, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	17
Ice cream, ices	20
Candy	14
Baked goods	47
Condiments	13
Meats	12

GINGER, OLEORESIN

Botanical name: Zingiber officinale Rosc.

Flavors in which used:
Ginger

Foods in which used:	Approx. Avg Maximum ppm
Beverages	79
Ice cream, ices	36, 65
Candy	27
Baked goods	52
Condiments	10, 1,000
Meats	30, 250

GLYCYRRHIZA

(See Licorice root)

GLYCYRRHIZA, EXTRACT

(See Licorice, extract)

GLYCYRRHIZIN, AMMONIATED

Botanical name: Glycyrrhiza glabra L. and other spp. of Glycyrrhiza

Flavors in which used:
Licorice, anise, root beer, ginger beer, wintergreen, birch beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	51
Candy	5, 62
Baked goods	5,

GRAINS OF PARADISE

Botanical name: Aframomum melegueta (Rosc.) K. Schum.

Flavors in which used:
Fruit, ginger, ginger ale, pepper

Foods in which used:	Approx. Avg Maximum ppm
Beverages	43
Ice cream, ices	120
Candy	120

GRAMINIS

(See Doggrass, extract)

GRAPEFRUIT, OIL

Botanical name: Citrus paradisi Macf.

Flavors in which used:
Grapefruit, lemon, lime, orange, peach

Foods in which used:	Approx. Avg Maximum ppm
Beverages	160
Ice cream, ices	180
Candy	630
Baked goods	370
Gelatin desserts	250
Chewing gum	1,500
Toppings	400

GUAIAC WOOD, EXTRACT

Botanical name: Guaiacum officinale L.
G. sanctum L.
Bulnesia sarmienti Lorentz

Flavors in which used:
Fruit, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	760
Ice cream, ices	4
Candy	8
Baked goods	70

GUAIAC WOOD, OIL

Botanical name: Guaiacum officinale L.
G. sanctum L.
Bulnesia sarmienti Lorentz

Flavors in which used:
Raspberry, strawberry, rose, fruit, honey, ginger, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.1
Ice cream, ices	4.1
Candy	9.2
Baked goods	8.1
Gelatin desserts	4.2
Chewing gum	60

GUARANA, GUM

Botanical name: Paullinia cupana HBK.

Flavors in which used:
Cola

Foods in which used:	Approx. Avg Maximum ppm
Beverages	12
Candy	10

GUM BENJAMIN
(See Benzoin, resin)

HAW BARK, BLACK, EXTRACT

Botanical name: Viburnum prunifolium L.

Flavors in which used:
Butter, caramel, cola, maple, walnut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5, 6
Ice cream, ices	2.5
Candy	6
Baked goods	6

HEDEONA, OIL
(See Pennyroyal, oil)

HEMLOCK, OIL
Spruce, Oil

Botanical name: Tsuga canadensis (L.) Carr.
T. heterophylla (Raf.) Sarg.
Picea mariana (Mill.)
P. glauca (Moench) Voss

Flavors in which used:
Fruit, root beer, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6.2
Ice cream, ices	15
Candy	11
Baked goods	2, 4
Gelatin desserts	1
Chewing gum	44

HICKORY BARK, EXTRACT

Botanical name: Carya species

Flavors in which used:
Butter, caramel, rum, maple, nut, spice, tobacco, smoke

Foods in which used:	Approx. Avg Maximum ppm
Beverages	21, 40
Ice cream, ices	0.01, 25
Candy	48

HICKORY BARK, EXTRACT (cont'd)

Foods in which used (cont'd):	Approx. Avg Maximum ppm
Baked goods	48
Condiments	65
Liquors	70

HIPBERRIES, EXTRACT
(See Rose hips, extract)

HOPS, EXTRACT

Botanical name: Humulus lupulus L.

Flavors in which used:
Fruit, root beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	160

HOPS, EXTRACT SOLID

Botanical name: Humulus lupulus L.

Flavors in which used:
Bitters, fruit, root beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	8
Ice cream, ices	20, 75
Candy	0.70, 50
Baked goods	0.80, 40

HOPS, OIL

Botanical name: Humulus lupulus L.

Flavors in which used:
Raspberry, grape, whisky, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.7
Ice cream, ices	1.7
Candy	2.5
Baked goods	2.9
Chewing gum	2.2
Condiments	20, 35

HOREHOUND (HOARHOUND), EXTRACT

Botanical name: Marrubium vulgare L.

Flavors in which used:
Maple, nut, root beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	8.7
Ice cream, ices	2
Candy	680
Baked goods	2

HORSEMINT LEAVES, EXTRACT

Botanical name: Monarda species

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	600

HYSSOP

Botanical name: Hyssopus officinalis L.

Flavors in which used:
Bitters

Foods in which used:	Approx. Avg Maximum ppm
Bitters	600

HYACINTH, ABSOLUTE

Botanical name: Hyacinthus orientalis L.

Foods in which used:	Approx. Avg Maximum ppm
Chewing gum	6

HYSSOP, EXTRACT

Botanical name: Hyssopus officinalis L.

Flavors in which used:
Liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	13
Ice cream, ices	13
Liquors	50

HYSSOP, OIL

Botanical name: Hyssopus officinalis L.

Flavors in which used:
Liquor, spice

HYSSOP, OIL (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.7
Ice cream, ices	0.25
Candy	14
Baked goods	0.25, 33
Liquors	5, 50

IMMORTELLE, EXTRACT

Botanical name: Helichrysum angustifolium DC.

Flavors in which used:
Raspberry, fruit, liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.2
Ice cream, ices	16
Baked goods	15
Candy	11
Gelatin desserts	0.01
Chewing gum	0.50

INDIAN GUM
(See Ghatti, gum)

INDIAN TRAGACANTH
(See Karaya, gum)

JASMINE, ABSOLUTE

Botanical name: Jasminum grandiflorum L.

Flavors in which used:
Loganberry, raspberry, strawberry, orange, violet, cherry, grape, honey, muscatel, almond, pistachio

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.41
Ice cream, ices	1.3
Candy	0.80
Baked goods	2.9
Gelatin desserts	0.10, 0.50
Chewing gum	30

JASMINE, CONCRETE

Botanical name: Jasminum grandiflorum L.

Flavors in which used:
Berry, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.70
Ice cream, ices	1, 1.5
Candy	1, 3.4
Baked goods	1, 15.
Gelatin desserts	1

JASMINE, OIL

Botanical name: Jasminum grandiflorum L.

Flavors in which used:
Raspberry, strawberry, floral, cherry

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.63
Ice cream, ices	1.6
Candy	3
Baked goods	9.3
Gelatin desserts	0.50, 1
Chewing gum	1.4
Jelly	0.25

JASMINE, SPIRITUS

Botanical name: Jasminum grandiflorum L.

Flavors in which used:
Blackberry, strawberry, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1
Ice cream, ices	0.75
Candy	3
Baked goods	4
Gelatin desserts	1
Cherries	10

JUNIPER, EXTRACT

Botanical name: Juniperus communis L.

Flavors in which used:
Liquor, root beer, sarsaparilla, wintergreen, birch beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	53
Ice cream, ices	5
Candy	5
Baked goods	5

JUNIPER, OIL

Botanical name: Juniperus communis L.

JUNIPER, OIL (cont'd)

Flavors in which used:
Berry, cola, pineapple, gin, rum, whisky, root beer, ginger, meat

Foods in which used:	Approx. Avg Maximum ppm
Beverages	32
Ice cream, ices	1.9
Candy	4.3
Baked goods	11
Gelatin desserts	0.01
Chewing gum	0.10
Meats	20
Liquors	0.95

JUNIPER BERRIES

Botanical name: Juniperus communis L.

Flavors in which used:
Gin

Foods in which used:	Approx. Avg Maximum ppm
Condiments	60
Liquors	2,000, 60

KADAYA
(See Karaya, gum)

KARAYA, GUM

Botanical name: Sterculia urens Roxb.

Flavors in which used:
Citrus, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	13
Ice cream, ices	1,300
Candy	1, 44
Baked goods	36
Meats	40
Toppings	3,500
Emulsions	20, 18,000

KATILO
(See Karaya, gum)

KOLA NUT, EXTRACT

Botanical name: Cola acuminata Schott et Endl.

Flavors in which used:
Butter, caramel, chocolate, cocoa, coffee, cola, walnut, root beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	120
Ice cream, ices	220
Candy	160
Baked goods	150

KRAMERIA, EXTRACT
(See Rhatany, extract)

KULLO
(See Karaya, gum)

KUTEERAL
(See Karaya, gum)

LABDANUM, ABSOLUTE

Botanical name: Cistus ladaniferus L.

Flavors in which used:
Raspberry, fruit, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.8
Ice cream, ices	9.8
Candy	5.6
Baked goods	23
Gelatin desserts	0.06
Chewing gum	1 19

LABDANUM, OIL

Botanical name: Cistus ladaniferus L.

Flavors in which used:
Fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.41
Ice cream, ices	0.78
Candy	2
Baked goods	0.75

LABDANUM, OLEORESIN

Botanical name: Cistus ladaniferus L.

Flavors in which used:
Fruit, vanilla

LABDANUM, OLEORESIN (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.7
Ice cream, ices	2
Candy	5.5
Baked goods	4

LAUREL BERRIES

Botanical name: Laurus nobilis L.

Foods in which used:	Approx. Avg Maximum ppm
Beverages	450

LAUREL LEAVES, EXTRACT

Botanical name: Laurus nobilis L.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Spiced vegetables	5

LAVANDIN, OIL

Botanical name: Hybrids between Lavandula officinalis Chaix and Lavandula latifolia Vill.

Flavors in which used:
Berry, citrus

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.5
Ice cream, ices	12
Candy	18
Baked goods	18
Chewing gum	0.30

LAVENDER

Botanical name: Lavandula officinalis Chaix

Flavors in which used:
Ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.08

LAVENDER, ABSOLUTE

Botanical name: Lavandula officinalis Chaix

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.20, 7.5
Ice cream, ices	0.40
Candy	2, 14
Baked goods	2, 6.3

LAVENDER, CONCRETE

Botanical name: Lavandula officinalis Chaix

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.01, 0.20
Ice cream, ices	0.08
Candy	0.03, 0.25
Baked goods	0.25

LAVENDER, OIL

Botanical name: Lavandula officinalis Chaix

Flavors in which used:
Citrus, pineapple, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.9
Ice cream, ices	7.8
Candy	5.5
Baked goods	8.3
Chewing gum	220

LEMON, EXTRACT

Botanical name: Citrus limon (L.) Burm. f.

Flavors in which used:
Lemon

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1,000
Ice cream, ices	540, 4,000
Candy	400, 12,000
Baked goods	8,900
Icings	10,000

LEMON, OIL

Botanical name: Citrus limon (L.) Burm. f.

Flavors in which used:
Blueberry, loganberry, strawberry, butter, grapefruit, lemon, lime, orange, cola, coconut, honey, wine, rum, root beer, ginger

Foods in which used:	Approx. Avg Maximum ppm
Beverages	230
Ice cream, ices	380
Candy	1,100
Baked goods	580
Gelatin desserts	340
Chewing gum	1,900
Condiments	10, 80
Meats	25, 40
Sirups	65
Icings	65, 600
Cereals	140

LEMON, OIL, TERPENELESS

Botanical name: Citrus limon (L.) Burm. f.

Flavors in which used:
Lemon, fruit, ginger, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	13
Ice cream, ices	25
Candy	68
Baked goods	50
Gelatin desserts	80
Chewing gum	110, 670
Toppings	1,000

LEMON-GRASS, OIL

Botanical name: Cymbopogon citratus DC.
C. flexuosus Stapf

Flavors in which used:
Lemon, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.4
Ice cream, ices	9.2
Candy	38
Baked goods	38
Gelatin desserts	290
Chewing gum	220

LICORICE, EXTRACT

Botanical name: Glycyrrhiza glabra L. and other species of Glycyrrhiza

Flavors in which used:
Fruit, licorice, anise, maple, root beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	33
Ice cream, ices	39
Candy	130
Baked goods	84
Gelatin desserts	4
Chewing gum	29,000
Sirups	50

LICORICE, EXTRACT POWDER

Botanical name: Glycyrrhiza glabra L.

Flavors in which used:
Licorice, anise, maple, root beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	110
Ice cream, ices	200
Baked goods	200
Candy	6,500
Chewing gum	22,000

LICORICE ROOT

Botanical name: Glycyrrhiza glabra L.

Flavors in which used:
Licorice, root beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	130
Candy	460
Baked goods	75
Chewing gum	3,200

LIME, OIL

Botanical name: Citrus aurantifolia (Christman) Swingle

Flavors in which used:
Grapefruit, lemon, lemon-lime, lime, orange, cola, fruit, rum, nut, ginger

Foods in which used:	Approx. Avg Maximum ppm
Beverages	130
Ice cream, ices	160
Candy	680
Baked goods	370
Gelatin desserts	200
Chewing gum	3,100
Condiments	20

LIME, OIL, TERPENELESS

Botanical name: Citrus aurantifolia (Christman) Swingle

Flavors in which used:
Lemon, lemon-lime, lime, cola, pineapple, ginger, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	15
Ice cream, ices	17
Candy	37
Baked goods	22
Gelatin desserts	26
Chewing gum	0.10
Sirups	8

LINALOE WOOD, OIL

Botanical name: Bursera delpechiana Poiss. and related Bursera species

Flavors in which used:
Berry, citrus, fruit, liquor, ginger

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.3
Ice cream, ices	3.8
Candy	16
Baked goods	15
Liquor	1

LINDEN FLOWERS

Botanical name: Tilia glabra Vent.

Flavors in which used:
Raspberry, vermouth

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2,000

LOCUST, GUM

Botanical name: Ceratonia siliqua L.

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2,900
Ice cream, ices	1,200
Baked goods	150
Condiments	980
Toppings	1,500, 6,000

LOVAGE

Botanical name: Levisticum officinale Koch

Flavors in which used:
Bitters, maple, walnut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4, 30
Ice cream, ices	18
Candy	28
Baked goods	25
Table sirup	0.08

LOVAGE, EXTRACT

Botanical name: Levisticum officinale Koch

Flavors in which used:
Berry, butter, butterscotch, caramel, coffee, fruit, maple, meat, black walnut, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	8.8
Ice cream, ices	18
Candy	26
Baked goods	24
Condiments	40
Table sirup	66
Icings	0.07

LOVAGE, OIL

Botanical name: Levisticum officinale Koch

Flavors in which used:
Butter, butterscotch, caramel, coffee, fruit, licorice, liquor, maple, nut, walnut, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Ice cream, ices	0.60
Candy	0.83
Baked goods	2.4
Condiments	3.7
Table sirup	6.8
Icings	10

MACE

Botanical name: Myristica fragrans Houtt.

Flavors in which used:
Bitters, meat, spice

MACE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	350
Ice cream, ices	40
Baked goods	1,300
Condiments	43
Meats	500, 2,000

MACE, OIL

Botanical name: Myristica fragrans Houtt.

Flavors in which used:
Chocolate, cocoa, coconut, cola, fruit, nut, spice, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6
Ice cream, ices	4.5
Candy	23
Baked goods	68
Chewing gum	37
Condiments	12
Meats	33

MACE, OLEORESIN

Botanical name: Myristica fragrans Houtt.

Flavors in which used:
Sausage, spice

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	360
Condiments	800
Meats	100, 600
Pickles	35

MANDARIN, OIL

Botanical name: Citrus reticulata Blanco

Flavors in which used:
Orange, tangerine, cherry, grape

Foods in which used:	Approx. Avg Maximum ppm
Beverages	62
Ice cream, ices	160
Candy	350
Baked goods	190
Gelatin desserts	30
Chewing gum	83

MARIGOLD, OIL
(See Tagetes, oil)

MARIGOLD, POT

Botanical name: Calendula officinalis L.

Foods in which used:	Approx. Avg Maximum ppm
Beverages	11
Ice cream, ices	44
Candy	33
Baked goods	33

MARJORAM, OLEORESIN

Botanical name: Majorana hortensis Moench. (Origanum majorana L.)

Flavors in which used:
Sausage, spice

Foods in which used:	Approx. Avg Maximum ppm
Condiments	75
Meats	37

MARJORAM, POT

Botanical name: Origanum vulgare L.

MARJORAM, SWEET

Botanical name: Majorana hortensis Moench. (Origanum majorana L.)

Flavors in which used:
Sausage, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.9
Baked goods	2,000
Condiments	200
Meats	510
Soups	150

MARJORAM, SWEET, OIL

Botanical name: Majorana hortensis Moench. (Origanum majorana L.)

Flavors in which used:
Vermouth, wine, spice

MARJORAM, SWEET, OIL (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.2
Ice cream, ices	1
Candy	4
Baked goods	15
Condiments	8

MARJORAM SEED

Botanical name: Majorana hortensis Moench. (Origanum majorana L.)

Flavors in which used:
Sausage, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	750
Condiments	70, 700
Meats	200, 3,500

MARSHMALLOW ROOT
(See Althea root)

MELISSA, EXTRACT
(See Balm leaves, extract)

MELISSA, OIL
(See Balm, oil)

MEXICAN OREGANO
(See Oregano)

MEXICAN SAGE
(See Oregano)

MILFOIL
(See Yarrow, herb)

MIMOSA, ABSOLUTE

Botanical name: Acacia decurrens Willd. var. dealbata

Flavors in which used:
Raspberry, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.79
Ice cream, ices	21
Candy	1.7
Baked goods	1.7

MOUNTAIN MAPLE, EXTRACT SOLID

Botanical name: Acer spicatum Lam.

Flavors in which used:
Chocolate, malt, maple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	100
Ice cream, ices	8
Candy	2, 60
Baked goods	44

MUCARA
(See Karaya, gum)

MUSK AMBRETTE
(See Flavoring Agents, Sub-Group A)

MUSK TONQUIN

Botanical name: Moschus moschiferus L.

Flavors in which used:
Fruit, maple, molasses

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.67
Ice cream, ices	0.62
Candy	2
Baked goods	2.7
Sirups	3

MUSTARD, BLACK
(See Mustard, brown)

MUSTARD, BROWN

Botanical name: Brassica juncea (L.) Coss. (brown)
Brassica nigra (L.) Koch. (black)

Flavors in which used:
Mustard, spice

Foods in which used:	Approx. Avg Maximum ppm
Condiments	5,200
Meats	2,300

MUSTARD, WHITE
(See Mustard, yellow)

MUSTARD, YELLOW

Botanical name: Brassica hirta Moench. (Brassica alba (L.) Boiss.)

Flavors in which used:
Sausage, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	350
Baked goods	20
Condiments	8,200
Meats	1,400
Pickles	2,500, 38,000

MYRCIA, OIL
(See Bay leaves, West Indian, oil)

MYRRH, GUM

Botanical name: Commiphora molmol Engler C. abyssinica (Berg) Engler and other Commiphora spp.

Flavors in which used:
Fruit, liquor, tobacco, smoke

Foods in which used:	Approx. Avg Maximum ppm
Beverages	84
Ice cream, ices	0.13
Candy	0.13, 10
Baked goods	0.15
Chewing gum	1.2
Soups	10

MYRRH, OIL

Botanical name: Commiphora molmol Engler C. abyssinica (Berg) Engler and other Commiphora spp.

Flavors in which used:
Honey, liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.3
Ice cream, ices	8.3
Candy	1.3
Baked goods	13

NARINGEN, EXTRACT

Botanical name: Citrus paradisi Macf.

Flavors in which used:
Bitters, grapefruit, pineapple

Foods in which used:	Approx. Avg Maximum ppm
Beverages	71
Ice cream, ices	5.7
Liquors	0.20

NEROLI BIGARDE, OIL

Botanical name: Citrus aurantium L.

Flavors in which used:
Berry, orange, cola, cherry, spice, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	3.2
Candy	8.9
Baked goods	16
Chewing gum	40

NUTMEG

Botanical name: Myristica fragrans Houtt.

Flavors in which used:
Cola, vermouth, sausage, eggnog, nutmeg

Foods in which used:	Approx. Avg Maximum ppm
Beverages	700
Ice cream, ices	550
Baked goods	2,000
Condiments	100
Meats	670
Pickles	100

NUTMEG, OIL

Botanical name: Myristica fragrans Houtt.

Flavors in which used:
Loganberry, chocolate, lemon, cola, apple, grape, muscatel, rum, sausage, eggnog, pistachio, root beer, cinnamon, dill, ginger, mace, nutmeg, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	14
Ice cream, ices	13
Candy	19

NUTMEG, OIL (cont'd)

Foods in which used (cont'd):	Approx. Avg Maximum ppm
Baked goods	75
Chewing gum	1.2, 640
Condiments	21
Meats	150
Sirups	16
Icings	30, 2

OAK CHIPS, EXTRACT

Botanical name: Quercus alba L.

Flavors in which used:
Bitters, whisky

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.5, 21
Ice cream, ices	2.5, 84
Candy	2.5, 63
Baked goods	63
Whisky	1,000

OAK MOSS, ABSOLUTE

Botanical name: Evernia prunastri (L.) Ach.
E. furfuracea (L.) Mann
and other lichens

Flavors in which used:
Fruit, honey, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.8
Ice cream, ices	0.41
Candy	0.81
Baked goods	2.5
Gelatin desserts	0.15
Condiments	40
Soups	0.50

OLIBANUM, OIL

Botanical name: Boswellia carteri Birdw.
and other Boswellia spp.

Flavors in which used:
Cola, fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.60
Ice cream, ices	1.2
Candy	3.3
Baked goods	3.7

ONION, OIL

Botanical name: Allium cepa L.

Flavors in which used:
Meat, onion, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50
Ice cream, ices	0.50
Candy	0.50
Baked goods	1.9
Condiments	2.2
Meats	10
Pickles	16

ORANGE, OIL, DISTILLED

Botanical name: Citrus sinensis (L.) Osbeck

Flavors in which used:
Orange, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	130
Ice cream, ices	140
Candy	690
Baked goods	440
Gelatin desserts	500, 45
Chewing gum	930

ORANGE, OIL, TERPENELESS

Botanical name: Citrus sinensis (L.) Osbeck

Flavors in which used:
Grapefruit, orange, cola, pineapple, liquor, root beer, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	10
Ice cream, ices	17
Candy	38
Baked goods	25
Gelatins and puddings	230
Chewing gum	13, 160
Condiments	25

ORANGE BLOSSOMS, ABSOLUTE

Botanical name: Citrus aurantium L.

Flavors in which used:
Citrus, fruit

ORANGE BLOSSOMS, ABSOLUTE (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.7
Ice cream, ices	7.3
Candy	5.7
Baked goods	1, 15
Chewing gum	10

ORANGE FLOWERS

Botanical name: Citrus aurantium L.

Flavors in which used:
Citrus, cola

Foods in which used:	Approx. Avg Maximum ppm
Beverages	100, 2,000

ORANGE FLOWERS, BITTER, OIL
(See Neroli bigarde, oil)

ORANGE LEAF, ABSOLUTE

Botanical name: Citrus aurantium L.

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.02
Ice cream, ices	0.10
Candy	0.25
Baked goods	0.25

ORANGE PEEL, BITTER, OIL

Botanical name: Citrus aurantium L.

Flavors in which used:
Orange, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	67
Ice cream, ices	71
Candy	150
Baked goods	110
Gelatin desserts	300
Chewing gum	500
Liquors	4

ORANGE PEEL, SWEET, EXTRACT

Botanical name: Citrus sinensis (L.) Osbeck

Flavors in which used:
Orange, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	99
Ice cream, ices	170
Candy	320, 330
Baked goods	320, 330

ORANGE PEEL, SWEET, OIL

Botanical name: Citrus sinensis (L.) Osbeck

Flavors in which used:
Blueberry, orange, cola, banana, pear, root beer, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	210
Ice cream, ices	330
Candy	1,000
Baked goods	430
Condiments	32
Meats	10
Gelatin desserts and puddings	1,300
Chewing gum	4,200
Sirups	0.34
Icings	190
Liquors	5
Cereals	49

ORANGE PEEL, SWEET, OIL, TERPENELESS

Botanical name: Citrus sinensis (L.) Osbeck

Flavors in which used:
Orange, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	43
Ice cream, ices	83
Candy	190
Baked goods	240
Gelatins and puddings	600

OREGANO

Botanical name: Mexican: Lippia species, usually L. graveolens HBK.
European: Origanum spp.
Elsewhere: Other genera including Coleus, Lantana and Hyptis

Flavors in which used:
Loganberry, cherry, sausage, root beer, spice

OREGANO (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	320
Baked goods	400
Condiments	2,800
Meats	540

OREGANUM
(See Oregano)

ORIGAN
(See Oregano)

ORIGANUM, OIL (EXTRACTIVE)

Botanical name: Thymus capitatus Hoffm. et Link (syn. Coridothymus capitatus Reichb.)

Flavors in which used:
Vermouth, sausage, root beer, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.50
Ice cream, ices	0.50
Candy	0.50
Baked goods	0.60, 33
Condiments	30
Meats	37

ORRIS, CONCRETE, LIQUID, OIL

Botanical name: Iris florentina L.

Flavors in which used:
Blackberry, raspberry, strawberry, violet, cherry, nut, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.7
Ice cream, ices	0.52
Candy	1.1
Baked goods	1.3
Gelatin desserts	0.56
Chewing gum	8.8
Icings	4

ORRIS ROOT, EXTRACT

Botanical name: Iris florentina L.

Flavors in which used:
Chocolate, fruit, nut, vanilla, cream soda

Foods in which used:	Approx. Avg Maximum ppm
Beverages	9.2
Ice cream, ices	29
Candy	56
Baked goods	31
Gelatin desserts	2
Chewing gum	10, 120

PALE CATECHU
(See Catechu, powder)

PALMA CHRISTI, OIL
(See Castor, oil)

PALMA ROSA, OIL

Botanical name: Cymbopogon martinii (Roxb.) Stapf.

Flavors in which used:
Rose, fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.2
Ice cream, ices	1.7
Candy	12
Baked goods	13

PAPRIKA

Botanical name: Capsicum annuum L.

Flavors in which used:
Sausage, spice

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	1,900
Condiments	1,000
Meats	7,400
Soups	7,500, 1,000

PAPRIKA, OLEORESIN

Botanical name: Capsicum annuum L.

Flavors in which used:
Fruit, meat, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1, 25
Ice cream, ices	1
Candy	0.56
Baked goods	1.2
Condiments	100
Meats	96

PARSLEY

Botanical name: Petroselinum crispum (Miller) Nyman (P. sativum Hoffm.)

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3,000
Baked goods	850
Condiments	2,700
Meats	1,000
Soups	500

PARSLEY, OIL

Botanical name: Petroselinum crispum (Miller) Nyman (P. sativum Hoffm.)

Flavors in which used:
Fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.4
Ice cream, ices	0.20, 0.25
Candy	4.1
Baked goods	8.5
Condiments	4.9

PARSLEY, OLEORESIN

Botanical name: Petroselinum crispum (Miller) Nyman (P. sativum Hoffm.)

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Condiments	5, 30

PATCHOULY, OIL

Botanical name: Pogostemon cablin Benth. P. heyneanus Benth.

Flavors in which used:
Cola, fruit, nut, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.88
Ice cream, ices	1.1
Candy	6.3
Baked goods	10
Chewing gum	43, 220

PEGU CATECHU, EXTRACT

(See Catechu, extract)

PENNYROYAL, OIL

Botanical name: Hedeoma pulegioides (L.) Pers. (American)
Mentha pulegium L. var. eriantha (European and North African)

Flavors in which used:
Mint

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.5, 5
Ice cream, ices	3.7
Candy	14
Baked goods	20, 24

PEPPER, BLACK

Botanical name: Piper nigrum L.

Flavors in which used:
Sausage, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	30
Baked goods	1,200
Condiments	690
Meats	1,700
Soups	27, 100
Pickles	7.2, 230

PEPPER, BLACK, OIL

Botanical name: Piper nigrum L.

Flavors in which used:
Meat, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.7
Ice cream, ices	0.10, 20
Candy	5.3
Baked goods	8.5
Condiments	17
Meats	140

PEPPER, BLACK, OLEORESIN

Botanical name: Piper nigrum L.

Flavors in which used:
Sausage, pepper

Foods in which used:	Approx. Avg Maximum ppm
Beverages	15
Ice cream, ices	1, 20
Candy	1, 15
Baked goods	1,600
Condiments	370
Meats	230

PEPPER, RED

Botanical name: Capsicum frutescens L. (Capsicum annuum L.)

Flavors in which used:
Liver, sausage, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	15, 240
Baked goods	270
Condiments	630
Meats	310
Pickles	11, 59

PEPPER, WHITE

Botanical name: Piper nigrum L.

Flavors in which used:
Sausage, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	5.9, 140
Baked goods	450
Condiments	2,700
Meats	600
Soups	500

PEPPER, WHITE, OIL

Botanical name: Piper nigrum L.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	0.60

PEPPER, WHITE, OLEORESIN

Botanical name: Piper nigrum L.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Meats	50

PEPPER TREE, OIL
(See Schinus molle, oil)

PEPPERMINT LEAVES

Botanical name: Mentha piperita L.

PEPPERMINT, OIL

Botanical name: Mentha piperita L.

Flavors in which used:
Chocolate, fruit, cordials, creme de menthe, peppermint, nut, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	99
Ice cream, ices	110
Candy	1,200
Baked goods	300
Gelatin desserts and puddings	75, 200
Chewing gum	8,300
Meats	8
Liquors	240
Icings	5, 54
Toppings	650

PERSIC, OIL
(See Apricot kernel, oil)

PETITGRAIN, LEMON, OIL

Botanical name: Citrus limon (L.) Burm. f.

Flavors in which used:
Citrus, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	8.6
Ice cream, ices	9.3
Candy	35
Baked goods	35

PETITGRAIN, MANDARIN, OIL

Botanical name: Citrus reticulata Blanco var. Mandarin

Flavors in which used:
Orange, tangerine, grape

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.3
Ice cream, ices	4.1
Candy	4.5
Baked goods	11
Gelatin desserts	0.43

PETITGRAIN, OIL

Botanical name: Citrus aurantium L.

Flavors in which used:
Loganberry, raspberry, strawberry, lime, neroli, orange, cola, violet, apple, banana, cherry, grape, peach, pear, honey, muscatel, nut, ginger, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.5
Ice cream, ices	1.4
Candy	5.3
Baked goods	17
Gelatin desserts	0.20
Chewing gum	4.1
Condiments	15

PIMENTA LEAF, OIL

Botanical name: Pimenta officinalis Lindl.

Flavors in which used:
Raspberry, fruit, nut, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.8
Ice cream, ices	1.3
Candy	35
Baked goods	32
Gelatin desserts	0.06
Chewing gum	80
Condiments	80
Meat products	160

PINE, MOUNTAIN, OIL
(See Pine needle, dwarf, oil)

PINE, SCOTCH, OIL

Botanical name: Pinus sylvestris L.

Foods in which used:	Approx. Avg Maximum ppm
Beverages	6
Candy	3
Baked goods	2

PINE NEEDLE, DWARF, OIL

Botanical name: Pinus mugo Turra var. pumilio (Haenke) Zenari

Flavors in which used:
Citrus, pineapple, liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.39
Ice cream, ices	0.63
Candy	1.9
Baked goods	1.9

PINE NEEDLE, OIL

Botanical name: Abies sibirica Ledeb.
A. alba Mill
A. sachalinensis Masters
A. mayriana Miyabe and Kudo

Flavors in which used:
Pineapple, citrus, liquor, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.5
Ice cream, ices	0.62
Candy	5.2
Baked goods	2.7

PINE TAR, OIL

Botanical name: Pinus palustris Mill. and other species of Pinus

Flavors in which used:
Licorice

Foods in which used:	Approx. Avg Maximum ppm
Ice cream, ices	2
Candy	10

PINUS PUMILIO, OIL
(See Pine needle, dwarf, oil)

PIPSISSEWA LEAVES, EXTRACT

Botanical name: Chimaphila umbellata Nutt.

Flavors in which used:
Root beer, sarsaparilla, wintergreen, birch beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	41
Candy	75

PLANTAROME
(See Yucca, Mohave, extract)

POMEGRANATE BARK, EXTRACT

Botanical name: Punica granatum L.

POPPY SEED

Botanical name: Papaver somniferum L.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	8,600

PYROLIGNEOUS ACID

Flavors in which used:
Butter, butterscotch, caramel, rum, tobacco, smoke, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	10
Ice cream, ices	15
Candy	51
Baked goods	33
Puddings	30
Meats	30, 300

PYROLIGNEOUS ACID, EXTRACT
Free from water-soluble components and from tars

Flavors in which used:
Smoke

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	50, 200
Meats	100, 300
Alcoholic beverages	20

QUACK GRASS
(See Doggrass, extract)

QUASSIA, EXTRACT

Botanical name: Quassia amara L.
Picrasma excelsa (Sw.) Planch.

Flavors in which used:
Bitters, citrus, cherry, grape, liquor, root beer, sarsaparilla, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.4
Baked goods	50
Liquors	3.4

QUEBRACHO BARK, EXTRACT

Botanical name: Schinopsis lorentzii (Griseb.) Engl. (Quebrachia lorentzzi Griseb.) Aspidosperma quebracho-blanco Schlecht.

Flavors in which used:
Fruit, rum, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	11
Ice cream, ices	23
Candy	27
Baked goods	28

QUICK GRASS
(See Doggrass, extract)

QUILLAIA

Botanical name: Quillaja saponaria Molina

Flavors in which used:
Fruit, root beer, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	95
Ice cream, ices	0.12
Candy	18
Sirups	6.8

QUININE, EXTRACT
(See Cinchona, extract)

QUINCE SEED, EXTRACT

Botanical name: Cydonia oblonga Mill.
(Cydonia vulgaris Pers.)

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.01, 40
Ice cream, ices	0.06, 20
Baked goods	1

RHATANY, EXTRACT

Botanical name: Krameria triandra Ruiz et Pavon (Peruvian)
K. argentea Martius (Brazilian)

Flavors in which used:
Raspberry, bitters, fruit, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	11
Ice cream, ices	31
Candy	40
Baked goods	63, 8
Liquors	10

RICINUS, OIL
(See Castor, oil)

ROSE, ABSOLUTE

Botanical name: Rosa alba L.
R. centifolia L. and varieties of these species

Flavors in which used:
Berry, rose, fruit, nut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.63
Ice cream, ices	1.2
Candy	2
Baked goods	1.6

ROSE, BULGARIAN, TRUE OTTO, OIL

Botanical name: Rosa damascena Mill.

Flavors in which used:
Loganberry, raspberry, strawberry, orange, rose, violet, cherry, grape, peach, honey, muscatel, maple, almond, pecan, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.51
Ice cream, ices	0.68
Candy	2.6
Baked goods	0.57
Gelatin desserts	0.5, 0.01
Chewing gum	15
Jellies	0.05

ROSE HIPS, EXTRACT
Hipberries, extract

Botanical name: Rosa canina L.
R. gallica L.
R. condita Scop.
R. rugosa Thunb.
and other Rosa species

Flavors in which used:
None listed

Foods in which used:
None reported

ROSEMARY

Botanical name: Rosmarinus officinalis L.

Flavors in which used:
Meat, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	700
Condiments	680
Meats	380

ROSEMARY, OIL

Botanical name: Rosmarinus officinalis L.

Flavors in which used:
Citrus, peach, meat, ginger

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.6
Ice cream, ices	0.50, 4
Candy	7.5
Baked goods	6.3
Condiments	2.9
Meats	40

ROSE WATER, STRONGER

Botanical name: Rosa centifolia L.

ROSE WATER, STRONGER (cont'd)

Flavors in which used:
Raspberry, cola

Foods in which used:	Approx. Avg Maximum ppm
Beverages	100

RUE

Botanical name: Ruta graveolens L.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	6

RUE, OIL

Botanical name: Ruta graveolens L.

Flavors in which used:
Blueberry, raspberry, coconut, grape, peach, rum, cheese, nut, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.2
Ice cream, ices	1.3
Candy	4.1
Baked goods	3.3
Condiments	1

SAFFRON

Botanical name: Crocus sativus L.

Flavors in which used:
Bitters, liquor, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3
Baked goods	10
Meats	260
Liquors	200

SAFFRON, EXTRACT

Botanical name: Crocus sativus L.

Flavors in which used:
Honey, rum

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.3, 7.5
Ice cream, ices	1.3, 9
Candy	6.3
Baked goods	1.9, 14
Condiments	50

SAGE

Botanical name: Salvia officinalis L.

Flavors in which used:
Fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	300
Baked goods	170
Meats	1,500

SAGE, OIL

Botanical name: Salvia officinalis L.

Flavors in which used:
Berry, grape, liquors, meat, creme de menthe, nutmeg, sage

Foods in which used:	Approx. Avg Maximum ppm
Beverages	3.7
Ice cream, ices	16
Candy	11
Baked goods	14
Chewing gum	30
Condiments	14
Meats	110
Pickles	2.4

SAGE, OLEORESIN

Botanical name: Salvia officinalis L.

Flavors in which used:
Sausage, spice

Foods in which used:	Approx. Avg Maximum ppm
Condiments	100
Meats	100

SAGE, SPANISH, OIL

Botanical name: Salvia lavandulaefolia Vahl.

Flavors in which used:
Fruit, spice

SAGE, SPANISH, OIL (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2, 11
Ice cream, ices	2, 44
Candy	20
Baked goods	20
Condiments	50
Meats	40

SAIGON CINNAMON
(See Cinnamon)

SAIGON CINNAMON LEAF, OIL
(See Cinnamon leaf, oil)

SANDALWOOD, EAST INDIAN, OIL
(See Sandalwood, yellow, oil)

SANDALWOOD, YELLOW, OIL

Botanical name: Santalum album L.

Flavors in which used:
Floral, fruit, honey, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.4
Ice cream, ices	7.5
Candy	7.7
Baked goods	6.6
Chewing gum	47

SAPONIN
(See Quillaia)

SARSAPARILLA, EXTRACT

Botanical name: Smilax species

Flavors in which used:
Cola, mint, root beer, sarsaparilla, wintergreen, birch beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	190
Ice cream, ices	130
Candy	1,000
Baked goods	2,000

SASSAFRAS BARK, EXTRACT (Safrol-free)

Botanical name: Sassafras albidum (Nutt.) Nees

Flavors in which used:
Rum, root beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	290
Ice cream, ices	10
Candy	100
Baked goods	50

SASSAFRAS LEAVES (Safrol-free)

Botanical name: Sassafras albidum (Nutt.) Nees

Foods in which used:	Approx. Avg Maximum ppm
Soups	30,000

SAUNDERS, WHITE, OIL
(See Sandalwood, yellow, oil)

SAVORY, SUMMER

Botanical name: Satureja hortensis L.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	800, 850
Condiments	200
Meats	1,100

SAVORY, SUMMER, OIL

Botanical name: Satureja hortensis L.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Condiments	10, 50
Candy	4
Baked goods	4

SAVORY, SUMMER, OLEORESIN

Botanical name: Satureja hortensis L.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Candy	4
Baked goods	4
Condiments	50, 35

SAVORY, WINTER

Botanical name: Satureja montana L.

SAVORY, WINTER, OIL

Botanical name: Satureja montana L.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Candy	4.0
Baked goods	4.0
Condiments	50

SAVORY, WINTER, OLEORESIN

Botanical name: Satureja montana L.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Candy	4.0
Baked goods	4.0
Condiments	50

SCHINUS MOLLE, OIL

Botanical name: Schinus molle L.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Candy	10
Baked goods	10
Condiments	3

SIBERIAN FIR, OIL
(See Pine needle, oil)

SLOE BERRIES

Botanical name: Prunus spinosa L.

Flavors in which used:
Sloe gin

SLOE BERRIES, EXTRACT

Botanical name: Prunus spinosa L.

Flavors in which used:
Berry, plum, liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	110
Ice cream, ices	50, 100
Candy	40
Baked goods	45
Cordials	43,000

SLOE BERRIES, EXTRACT SOLID

Botanical name: Prunus spinosa L.

SMALLAGE
(See Lovage)

SMALLAGE, EXTRACT
(See Lovage, extract)

SMALLAGE, OIL
(See Lovage, oil)

SMELLAGE
(See Lovage)

SMELLAGE, EXTRACT
(See Lovage, extract)

SMELLAGE, OIL
(See Lovage, oil)

SNAKEROOT, CANADIAN, OIL

Botanical name: Asarum canadense L.

Flavors in which used:
Ginger, ginger ale, wintergreen, birch beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1.9
Ice cream, ices	1, 5
Candy	8.3
Baked goods	8.3
Condiments	1.4, 4

SOAP BARK
(See Quillaia)

SPANISH HOPS
(See Dittany of Crete)

SPANISH ORIGANUM
(See Origanum, oil (extractive))

SPEARMINT

Botanical name: Mentha spicata L.

Flavors in which used:
Spearmint

Foods in which used:	Approx. Avg Maximum ppm
Beverages	500
Meats	500
Condiments	1,000

SPEARMINT, EXTRACT

Botanical name: Mentha spicata L.

Flavors in which used:
Meat, spearmint, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2,100
Ice cream, ices	100
Candy	0.20

SPEARMINT, OIL

Botanical name: Mentha spicata L.

Flavors in which used:
Butter, caramel, citrus, fruit, garlic, soy, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	200
Ice cream, ices	60
Candy	600
Baked goods	1,800
Condiments	100,000
Fats and oils	180
Icings	50,000

SPIKE LAVENDER, OIL

Botanical name: Lavandula latifolia Vill.
(Lavandula spica DC.)

Flavors in which used:
Floral, fruit, mint, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	10, 11
Ice cream, ices	10, 44
Candy	18
Baked goods	33, 50

SPIRAL FLAG, OIL
(See Costus root, oil)

SPRUCE, OIL
(See Hemlock, oil)

STERCULIA
(See Karaya, gum)

ST. JOHN'S BREAD
(See Carob bean, extract)

STORAX

Botanical name: Liquidambar orientalis Mill.
Liquidambar styraciflua L.

Flavors in which used:
Strawberry, fruit, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2
Ice cream, ices	2
Candy	13
Baked goods	23
Chewing gum	300
Toppings	15

STYRAX, GUM
(See Storax)

STYRAX, EXTRACT

Botanical name: Liquidambar orientalis Mill.
Liquidambar styraciflua L.

Flavors in which used:
Chocolate, fruit, liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.84
Ice cream, ices	0.25, 0.60
Candy	3.5
Baked goods	4, 6
Gelatin desserts	0.04

SWEET FLAG
(See Calamus)

SWEET FLAG, OIL
(See Calamus, oil)

TAGETES, OIL

Botanical name: Tagetes erecta L.
Tagetes patula L.
T. glandulifera Schrank

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	4.1
Ice cream, ices	7.4
Candy	9
Baked goods	13
Gelatin desserts	7
Condiments	20

TANGAN-TANGAN, OIL
(See Castor, oil)

TANGERINE, OIL

Botanical name: Citrus reticulata Blanco

Flavors in which used:
Blueberry, mandarin, orange, tangerine, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	78
Ice cream, ices	160
Candy	160
Baked goods	250
Gelatin desserts	20
Chewing gum	810

TAR, OIL
(See Pine tar, oil)

TARRAGON

Botanical name: Artemisia dracunculus L.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	20
Condiments	23
Meats	260

TARRAGON, OIL
(See Estragon, oil)

TERRA JAPONICA
(See Catechu, powder)

THYME

Botanical name: Thymus vulgaris L.

Flavors in which used:
Meat, tuna, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	13
Candy	5
Baked goods	550
Meats	360
Soups	500, 1,000

THYME, OIL

Botanical name: Thymus vulgaris L.

Flavors in which used:
Sausage, spice, thyme

Foods in which used:	Approx. Avg Maximum ppm
Beverages	1, 5
Ice cream, ices	20
Candy	1, 15
Baked goods	1.5, 5.3
Chewing gum	100
Condiments	18
Meats	33
Soups	0.13

THYME, WHITE, OIL

Botanical name: Thymus vulgaris L.

Flavors in which used:
Fruit, liquor, thyme

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.01, 1
Ice cream, ices	0.01
Candy	27
Baked goods	5.4
Condiments	4, 8
Meats	15
Wine	5

TOLU, BALSAM, EXTRACT

Botanical name: Myroxylon balsamum L. Harms. (M. toluiferum HBK.)

Flavors in which used:
Butter, butterscotch, cherry, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	32
Ice cream, ices	150
Candy	57
Baked goods	71
Chewing gum	2, 38

TOLU, BALSAM, GUM

Botanical name: Myroxylon balsamum L. Harms. (M. toluiferum HBK.)

Flavors in which used:
Fruit, maple, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.6
Ice cream, ices	13
Candy	5.2
Baked goods	8
Sirups	3

TRIFOLIUM, EXTRACT SOLID
(See Clover tops, red, extract solid)

TRITICUM
(See Doggrass, extract)

TUBEROSE, OIL

Botanical name: Polianthes tuberosa L.

Flavors in which used:
Peach

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.26
Ice cream, ices	0.45
Candy	1.5
Baked goods	1.7

TURMERIC

Botanical name: Curcuma longa L.

Flavors in which used:
Coconut, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Puddings	0.05
Condiments	760
Meats	200
Soups	30, 50
Pickles	690

TURMERIC, EXTRACT

Botanical name: Curcuma longa L.

Flavors in which used:
Fruit, meat, cheese

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.78
Condiments	59
Meats	43
Soup bases	30, 40
Pickles	40

TURMERIC, OLEORESIN

Botanical name: Curcuma longa L.

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Condiments	640
Meats	20, 100
Pickles and brine	200

TURPENTINE, GUM

Botanical name: Pinus palustris Mill. and other Pinus species

Flavors in which used:
Spice

Foods in which used:	Approx. Avg Maximum ppm
Baked goods	15

TURPENTINE, STEAM DISTILLED

Botanical name: Pinus palustris Mill. and other Pinus species

Flavors in which used:
Spice

TURPENTINE, STEAM DISTILLED (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Candy	11
Baked goods	10, 20

VALERIAN ROOT, EXTRACT

Botanical name: Valeriana officinalis L.

Flavors in which used:
Cheese, fruit, maple, black walnut, walnut, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	25
Ice cream, ices	35
Candy	65
Baked goods	69
Condiments	24

VALERIAN ROOT, OIL

Botanical name: Valeriana officinalis L.

Flavors in which used:
Raspberry, cheese, grape, peach, honey, maple, black walnut

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.52
Ice cream, ices	0.36
Candy	2.6
Baked goods	3.1
Gelatin desserts	0.02, 1.5

VANILLA

Botanical name: Vanilla planifolia Andrews
Vanilla tahetinsis J. W. Moore

Flavors in which used:
Butter, butterscotch, caramel, chocolate, fruit, vanilla

Foods in which used:	Approx. Avg Maximum ppm
Beverages	420
Ice cream, ices	600
Candy	490
Baked goods	530
Puddings	630
Sirups	10
Icings	200, 630
Toppings	300

VANILLA, EXTRACT

Botanical name: Vanilla planifolia Andrews
Vanilla tahetinsis J. W. Moore

Flavors in which used:
Strawberry, butter, butterscotch, caramel, chocolate, cola, fruit, maple, root beer, vanilla, cream soda

Foods in which used:	Approx. Avg Maximum ppm
Beverages	200
Ice cream, ices	3,000
Candy	4,000
Baked goods	1,900
Sirups	8.5, 54
Icings	2,000, 4,800
Toppings	2,700

VANILLA, OLEORESIN

Botanical name: Vanilla planifolia Andrews
Vanilla tahetinsis J. W. Moore

Flavors in which used:
Butter, butterscotch, caramel, chocolate, fruit, maple, root beer, vanilla, cream soda

Foods in which used:	Approx. Avg Maximum ppm
Beverages	190
Ice cream, ices	290
Candy	210
Baked goods	300
Puddings	230
Condiments	200

VIOLET LEAVES, ABSOLUTE

Botanical name: Viola odorata L.

Flavors in which used:
Berry, violet, fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2.3
Ice cream, ices	8.4
Candy	7.6
Baked goods	2, 24

WALNUT HULL, EXTRACT

Botanical name: Juglans nigra L.
J. regia L.

Flavors in which used:
Walnut

WALNUT HULL, EXTRACT (cont'd)

Foods in which used:	Approx. Avg Maximum ppm
Beverages	43, 90
Ice cream, ices	100, 170
Candy	130
Baked goods	100

WHITE FLAG, EXTRACT
(See Orris root, extract)

WILD GINGER, CANADIAN, OIL
(See Snakeroot, Canadian, oil)

WINTERGREEN, EXTRACT

Botanical name: Gaultheria procumbens L.

Flavors in which used:
Root beer, wintergreen

Foods in which used:	Approx. Avg Maximum ppm
Beverages	10
Candy	900, 5,000

WINTERGREEN, OIL

Botanical name: Gaultheria procumbens L.

Flavors in which used:
Checkerberry, raspberry, teaberry, fruit, nut, root beer, sassafrass, spice, wintergreen

Foods in which used:	Approx. Avg Maximum ppm
Beverages	56
Ice cream, ices	44
Candy	260
Baked goods	1,500
Chewing gum	3,900

WORMWOOD

Botanical name: Artemisia absinthium L.

Flavors in which used:
Bitters, liquor

Foods in which used:	Approx. Avg Maximum ppm
Beverages	360
Liquors	5

WORMWOOD, EXTRACT

Botanical name: Artemisia absinthium L.

Flavors in which used:
Bitters, liquor, vermouth

Foods in which used:	Approx. Avg Maximum ppm
Beverages	15, 43
Ice cream, ices	170
Candy	130
Liquors	10, 40

WORMWOOD, OIL

Botanical name: Artemisia absinthium L.

Flavors in which used:
Bitters, apple, vermouth, wine

Foods in which used:	Approx. Avg Maximum ppm
Beverages	14
Ice cream, ices	0.50, 32
Candy	9
Baked goods	2
Liquors	11

YARROW, HERB

Botanical name: Achillea millefolium L.

Flavors in which used:
Liquor, root beer, spice

Foods in which used:	Approx. Avg Maximum ppm
Beverages	29
Liquor	5, 40

YELLOW MELILOT
(See Melilot herb)

YERBA SANTA, FLUID EXTRACT

Botanical name: Eriodictyon californicum (Hook. and Arn.) Torr.

Flavors in which used:
Fruit

Foods in which used:	Approx. Avg Maximum ppm
Beverages	25
Ice cream, ices	200
Candy	400
Baked goods	400

YLANG YLANG, OIL

Botanical name: Cananga odorata Hook. f. and Thomson

Flavors in which used:
Raspberry, cola, violet, cherry, rum, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	0.95
Ice cream, ices	1.4
Candy	2.9
Baked goods	2.9
Chewing gum	18, 25
Icings	0.75

YUCCA, JOSHUA TREE

Botanical name: Yucca brevifolia Engelm.

Flavors in which used:
Root beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	120
Ice cream, ices	20

YUCCA, MOHAVE, EXTRACT

Botanical name: Yucca schidigera Roezl ex Ortgies (Y. mohavensis Sarg.)

Flavors in which used:
Root beer

Foods in which used:	Approx. Avg Maximum ppm
Beverages	150

ZEDOARY

Botanical name: Curcuma zedoaria (Berg.) Rosc.

Flavors in which used:
Bitters, ginger ale

Foods in which used:	Approx. Avg Maximum ppm
Beverages	2,000

ZEDOARY BARK, EXTRACT

Botanical name: Curcuma zedoaria (Berg.) Rosc.

GROUP 12

MISCELLANEOUS—YEAST FOODS, FIRMING AGENTS, TEXTURIZERS, BINDERS, ANTI-CAKING AGENTS, ENZYMES

GROUP 12: MISCELLANEOUS—YEAST FOODS, FIRMING AGENTS, TEXTURIZERS, BINDERS, ANTI-CAKING AGENTS, ENZYMES

Name	Function, Usage	Levels of Use
Abietic Acid	Carrier	
	Enriched rice. Up to	0.0026%
Acetic Anhydride	Food starch modifier. Up to	5.0%
Acetone	Solvent	
	Residual in spice oleoresins. Up to	0.003%
Adipic Anhydride	Food-starch modifying agent	
	In presence of up to 5% acetic anhydride, up to	0.12%
Aluminum Calcium Sulfate	Anti-caking agent	
	Vanilla powder. Up to	2.0%
Aluminum Potassium Sulfate	Firming agent, carrier for bleaching agent	
	Pickles, sweet and dill Cereal flours. Carrier for benzoyl peroxide in bleached flours and cheeses. One part by weight of benzoyl peroxide to six parts by weight of carrier Blue cheese Gorgonzola cheese. Milk may be bleached by the use of benzoyl peroxide or a mixture of benzoyl with potassium alum, calcium sulfate, and magnesium carbonate; but the weight of the benzoyl peroxide is not more than 0.002% of the weight of the milk being bleached and the weight of the potassium alum, calcium sulfate, and magnesium carbonate, singly or combined, is not more than six times the weight of the benzoyl peroxide used	
Aluminum Sodium Sulfate	Firming agent, carrier for bleaching agent	
	Same as for Aluminum Potassium Sulfate	
Aluminum Stearate	Chewing-gum base component	
Aluminum Sulfate	Firming agent	
	Pickles, sweet and dill. Up to	1.0%
Ammonium Chloride	Yeast food, dough conditioner	
	Yeast food in yeast production Bread, rolls, buns, etc. Calcium sulfate, calcium lactate, calcium carbonate, dicalcium phosphate, ammonium phosphates, ammonium sulfate, ammonium chloride, or any combination of two or more of these; but the total quantity of such ingredients is not more than 0.25 part for each 100 parts by weight of flour used	
Ammonium Sulfate	Yeast food, dough conditioner	
	Yeast food in production of champagne and other sparkling wines Same as for Ammonium Chloride	
Aspergillus Oryzae, preparation from	Amylase and protease	
	Bakery products. Bread, rolls, buns, etc.	

Name	Function, Usage	Levels of Use
Beeswax (Yellow wax, bleached (white) wax)	Candy glaze and polish. Up to	0.4%
Bentonite	Clarifying agent in wine, etc.	
Bromelin	Enzyme for tenderizing meats	
Brominated Vegetable Oils	Clouding agent. These high-density oils are blended with low-density essential oils to make them easier to emulsify	
	Used largely in soft drinks	0.0007 - 0.06%
	Citrus-flavored beverages	0.03 - 0.05%
	Ice cream, ices	0.001 - 0.06%
	Baked goods	0.0015 - 0.02%
Butadiene-Styrene Copolymer	Chewing-gum base component	
Butane	Gas	
Butyl Rubber, without inhibitor (chewing-gum grade)	Chewing-gum base component	
Caffeine	Stimulant	
	Cola beverages. Up to	0.02%
Calcium Carbonate	Yeast food, firming agent, carrier	
	Used in candies; in hard candies to prevent sticking; in fudge to promote creaming. Up to	2.5%
	Cereal flours. Carrier for bleaching ingredient. One part benzoyl peroxide per six parts carrier, maximum	
	Bread, rolls, buns, etc. See Ammonium Chloride	
Calcium Chloride	Firming agent	
	Used to firm sliced apples and other fruit	0.05%
	Apple-pie mix, for firming slices	0.03%
	Jelling ingredient	
	Certain cheeses. Up to 0.02% of the weight of the milk is added as an optional ingredient to aid coagulation	
	Artificially sweetened fruit jelly in amount necessary	
	Canned potatoes. Calcium content of the finished product, up to	0.051%
	Canned tomatoes. Calcium content of the finished product, up to	0.026%
Calcium Citrate	Firming agent	
	Jelling ingredient	
	Artificially sweetened fruit jelly in amount necessary	
	Canned potatoes, canned sweet peppers. Calcium content of the finished product, up to	0.51%
	Canned tomatoes. Calcium content of the finished product, up to	0.026%
Calcium Gluconate	Firming agent	
	Firming tomatoes, apple slices	
Calcium Hydroxide	Firming agent	
	Firming various fruit products	

Name	Function, Usage	Levels of Use
Calcium Lactate Calcium Oxide	Yeast food, dough conditioners	
	Bread, rolls, buns, etc. Same as for Ammonium Chloride	
Calcium Phosphate, dibasic (Dicalcium orthophosphate)	Yeast food, dough conditioner	
	Constituent of bread improvers per 100 lbs of flour	0.25 lbs
	Cereal flours. Carrier for bleaching ingredient. One part benzoyl peroxide per six parts of carrier, maximum	
	Bread, rolls, buns, etc. See Ammonium Chloride	
Calcium Phosphate, monobasic (Monocalcium orthophosphate, monocalcium acid phosphate)	Yeast food, dough conditioner, firming agent	
	Jelling ingredient	
	Bread, rolls, buns, etc.	
	Artificially sweetened fruit jelly	
	For canned potatoes, canned sweet peppers, and canned tomatoes, see Calcium Citrate	
Calcium Phosphate, tribasic	Anti-caking agent	
	Table salt	1.0%
	Powdered sugar	1.5%
	Malted milk powder	1.0%
	Condiments	0.0047 - 0.054%
	Puddings	0.05 - 0.1%
	Meat dry-curing mixtures	
	Cereal flours. See Calcium Phosphate, dibasic	
	Vanilla powder. Anti-caking ingredient. Total weight of such ingredients up to	2.0%
Calcium Salts	Firming agent	
	Potatoes. Purified calcium chloride, calcium citrate, calcium sulfate, monocalcium phosphate, or any mixture of two or more such calcium salts in a quantity reasonably necessary to firm the potatoes, up to	0.051%
	Canned tomatoes. Purified calcium salts as for potatoes, up to	0.026%
Calcium Salts of fatty acids	Binder, anti-caking agent	
Calcium Sulfate	Yeast food, dough conditioner, firming agent	
	Yeast food in brewing and other fermentation industries	
	Production of Spanish type or flor sherry, as potassium sulfate, up to	0.2%
	Jelling ingredient	
	Cereal flours. Carrier for bleaching agent. One part benzoyl peroxide per six parts carrier, maximum	
	Bread, rolls, buns, etc. See Ammonium Chloride	
	Blue cheese	
	Gorgonzola cheese. Bleach ingredient	
	Artificially sweetened fruit jelly	
	For canned potatoes, canned sweet peppers, and canned tomatoes. See Calcium Citrate	
Carbon Dioxide	Pressure-dispensing agent	
	Gassed creams (pressure-dispensed whipped cream)	
Casein Ammonium Caseinate Calcium Caseinate Potassium Caseinate Sodium Caseinate	Texturizer	
	Ice cream, frozen custard, ice milk, fruit sherbets	

Name	Function, Usage	Levels of Use
Castor Oil	Release and anti-sticking agent in hard-candy products	
	In hard candy up to	0.05%
Catalase	Enzyme	
	In milk for making cheeses for elimination of residual peroxide	0.002%
Chilte	Chewing-gum base component	
Citrate, Sodium Citric Acid	Nutrients for culture media	
	Cultured buttermilk	0.12 - 0.2%
Epichlorhydrin	Modifier for food starch, up to	0.3%
Ethyl Alcohol (Ethanol)	Solvent	
	Candy glaze	
	Beverages	
	Ice cream, ices	0.075 - 0.2%
	Candy	0.034 - 0.1%
	Baked goods	0.09 - 0.18%
	Liquors	0.02 - 45%
	Sauces	0.1%
	Gelatin desserts	0.017 - 0.023%
Ethyl Cellulose	Binder and filler in dry vitamin preparations. Up to	35%
	Chewing gum	.025%
	Confectionery	.012%
Ethylene Dichloride	Solvent	
	Spice oleoresins, up to	0.005%
Fatty Acids, free of chick-edema factor (caprylic, capric, lauric, myristic, oleic, palmitic, stearic, and combinations of these) and related fat-forming acids	General food use, binder, lubricant	
Fatty Acids, salts of (one or more of the aluminum, ammonium, calcium, magnesium, potassium, and sodium salts of the above fatty acids)	Binder, anti-caking agents	
Fatty Acids of cottonseed and soybean	Lubricant, binder; component in manufacture of other food-grade additives	
Fatty Acids of tallow	Food lubricant and binder; component in manufacture of other food additives	
Ferrocyanide Decahydrate, Sodium (Yellow prussiate of soda)	Anti-caking agent in salt	
	Adjunct in the production of dendritic salt crystals in nonstandardized foods, up to	0.0013%
	Anhydrous ferrocyanide, up to	0.0005%
Ficin	Enzyme tenderizer for meat	
Fumaric Acid (Rosin adduct, esterified with glycerin)	Marking-ink component	
	Fruits and vegetables	

Name	Function, Usage	Levels of Use
Gibberellic Acid and its potassium salt	Used in malting barley (brewers or distillers)	
	In malt up to	0.0002%
	In finished malt beverage up to	0.0005%
	In distilled spirits up to	0.0%
Glutamate, Ammonium Glutamate, Monopotassium Glutamic Acid Glutamic Acid Hydrochloride	Flavoring intensifiers, adjuncts, salt substitutes	
Glycerin (Glycerol)	Humectant, solvent, bodying agent, plasticizer for edible coatings	
	Humectant in marshmallows, pastilles, and jelly-like candies	10.0%
	Solvent for colors and flavors	
	Bodying agent in combination with gelatin and edible gums	
	Plasticizer in edible coatings for meat and cheese	
	Beverages	0.025 - 0.06%
	Confectionery. Up to	10.0%
	Baked goods	0.08 - 0.13%
	Chewing gums	0.45 - 0.6%
	Gelatin desserts	0.009 - 0.036%
	Meat products	0.001 - 0.004%
	Soda-fountain fudge	0.4 - 2.3%
Glycerine, polymerized and esterified with distilled oleic, stearic, and coconut-oil fatty acids (free of chick-edema factor)	Crystallization inhibitor in oils and other foods	
Glyceryl Abietate (Glyceryl ester of wood rosin)	Density adjuster for citrus oil used in the preparation of beverages	
	Alcoholic beverages, still and carbonated. Up to	0.006%
	Fruit drinks. Up to	0.006%
Gum Benzoin	Candy glaze and polish	
	Confectionery. Up to	0.4%
Helium	Propellant for foods packed in pressurized containers	
Hexane	Solvent for spice oleoresins. Up to	0.0025%
Isobutylene-isoprene Copolymer	Component of chewing-gum base	
Isopropanol (Isopropyl alcohol)	Component of defoamer used in beet-sugar and yeast production	
	Solvent for spice oleoresins. Up to	0.005%
Lanolin	Chewing-gum base component	
Magnesium Carbonate	Drying agent, color-retention agent, bleach ingredient, anti-caking agent, carrier	
	Free-running and iodized salt	
	Diluent for benzoyl peroxide mixtures in bleached flours and cheeses	
	Meat dry-curing mixtures	
	Filler for cereal enrichment pre-mixes	
	Cereal flours. Carrier for bleaching ingredient (one part benzoyl peroxide per six parts carrier, maximum)	
	Blue cheese	
	Gorgonzola cheese	

Name	Function, Usage	Levels of Use
Magnesium Chloride	Color-retention agent, firming agent	
	Canned peas	
Magnesium Hydroxide	Drying agent and color-retention agent	
	Used for improved gel curd formation in cheese manufacture. Approximately	0.1%
Magnesium Sulfate	Water corrective	
	Used in brewing industry. Up to	0.01%
Mannitol	Dusting or anti-sticking agent, texturizing agent, excipient	
	Chewing gum. Up to	1.0%
	Candy. Up to	5.0%
Methyl Glucoside of fatty acids of edible coconut oil	Crystallization aid in beet-sugar manufacture. Up to	5 ppm
Mineral Oil	Coating for fresh fruits and vegetables. Up to	0.00035%
	Defoaming agent in processing. In food up to	0.015%
	Lubricant and binder for capsules and tablets supplying small quantities of flavor, spice, condiment, and vitamins	
	Sealant in food production to prevent access of air and to retard evaporation. Up to	0.005%
	Lubricant in food-processing equipment. In food up to	0.001%
	Dough-divider oil, pan oil, and trough grease. Up to	0.15%
	Lubricant in meat-packing plants. In meat, up to	0.005%
	Release agent in drying pans	
	In dried egg albumin, up to	0.1%
	In dried fruits and vegetables, up to	0.02%
	Release agent and sealant in confectionery	0.4%
Morpholine Morpholine Salt of fatty acids	Component of coating on fresh fruits and vegetables	
Nickel	Catalyst for hydrogenation of fat	
	Sufficient for purpose	
Nitrate, Potassium (Saltpeter, niter)	Color fixative in cured-meat products	
	Cured meat products, as nitrite, up to	0.02%
	Pickling brine, per 100 gal, up to	7 lbs
	Meat, dry cure, per 100 lbs, up to	3 1/2 oz
	Chopped meat, per 100 lbs, up to	2 3/4 oz
Nitrate, Sodium	Color fixative	
	Cured meats. Frankfurter, bacon, uncooked smoked ham, bologna, meat spreads, potted meats, vienna sausage, spiced ham, poultry, wild game. As nitrite, up to	0.02%
	Meat-curing salt	
	Smoked, cured shad and salmon. As nitrite, up to	0.05%
	As nitrate, up to	0.05%
Nitrite, Potassium	Color fixative	
	Cured meat products. Up to	0.02%
Nitrite, Sodium	Color fixative	
	Cured meats. Bacon, bologna, frankfurter, deviled ham, meat spreads, potted meats, spiced ham, vienna sausage, uncooked smoked ham. Up to	0.02%
	Meat curing salt	

Name	Function, Usage	Levels of Use
Nitrite, Sodium (cont'd)	Smoked-cured tuna fish products. Up to	0.001%
	Smoked-cured shad and salmon. Up to	0.02%
Nitrogen	Gas-packed foods	
	Dressings for foods. Air may be replaced by nitrogen or carbon dioxide	
Nitrous Oxide	Whipping agent and propellant for certain dairy and vegetable-fat toppings in pressurized containers	
Octafluorocyclobutane	Propellant and aerating agent in foamed or sprayed food products. Used alone or in combination with carbon dioxide or nitrous oxide	
Oleic Acid	Lubricant and binder for foods; component in manufacture of food-grade additives	
Oxystearin	Crystallization inhibitor	
	Cottonseed and soybean cooking and salad oils. Up to	0.125%
Papain	Proteinase enzyme for meat tenderizing	
	Enriched farina. Added to reduce cooking time. Up to	0.1%
Petrolatum	Release agent and sealant for confectionery. Up to	0.4%
	Coating for fruits and vegetables	
	Component of protective coating for cheese	
	Bakery products; dough divider oil, pan oil, trough grease. Up to	0.15%
	Lubricant in meat-packing plants. Up to	0.005%
	Release agent in drying pans for dried-egg albumin. Up to	0.1%
	Release agent in drying pans for dehydrated fruits and vegetables. Up to	0.02%
	Lubricant for tableted, capsulated, or extruded food, excluding confectionery. Up to	0.001%
Phosphate, Ammonium, dibasic (Diammonium orthophosphate)	Yeast food, dough conditioner	
	Used in brewing industry for water corrective and yeast food. Up to	0.015%
Phosphate, Ammonium, monobasic (Monoammonium orthophosphate)	Bread, rolls, buns, etc. See Ammonium Chloride	
Phosphate, Potassium, dibasic (Dipotassium orthophosphate)	Yeast food	
	Used in brewing industry as yeast food. Up to	0.01%
Phosphate, Potassium, monobasic (Monopotassium orthophosphate)	Yeast food in production of champagne and other sparkling wines	
Pimaric and Abietic Acid Copolymers and/or resin constituents reacted with hydrated lime	Surface coatings on fresh fruits. Up to	0.02%
Polyacrylamide	Film former in imprinting of soft-shell gelatin capsules. Polyacrylamide contains up to 0.2% of acrylamide monomer	
Polyacrylic Acid (Hydrolyzed polyacrylamide and/or hydrolyzed polyacrylonitrile)	Flocculant in clarification of sugar juice	
	Beet sugar. Up to	0.0001%
	Cane sugar. Up to	0.0005%
Polyethylene (Mol. wt 2,000 to 21,000)	Chewing-gum base component	

Name	Function, Usage	Levels of Use
Polyethylene Glycol, 400, USP	Vehicle in non-nutritive artificial sweetener	
Polyethylene Glycol, 400 through 6000	Component of coatings and binders in tableted foods. Improves resistance to oxidation and moisture	
Polyethylene Glycol, 6000 (Average mol. wt 6,000 to 7,500)	Binder and plasticizing agent in tablets used for food; as an adjunct in tablet coatings to improve resistance to moisture and oxidation	
Polyvinyl Acetate (Mol. wt 2,000 min)	Chewing-gum base component	
Polyvinylpolypyrrolidone	Dietary products	
	Intake per day, up to	40 mg
	Clarifying agent in beverages and vinegar	
Polyvinylpyrrolidone	Clarifying agent in vinegar. Up to	0.004%
Potassium Chloride	Yeast food	
	Used in brewing industry to improve brewing and fermentation. Up to	0.04%
	Jelling ingredient	
	Artificially sweetened fruit jelly	
Potassium Sulfate	Water corrective	
	Used in brewing industry. Up to	0.005%
Propane	Gas	
Propylene Glycol	Solvent, wetting agent, humectant	
	Confections	0.05 - 5.0%
	Chocolate products. Up to	1.4%
	Ice-cream emulsifiers	0.03 - 0.08%
	Flavor and color solvent	
	Shredded coconut	
	Beverages	0.04 - 0.07%
	Baked goods	0.05 - 0.13%
	Toppings and icings. Up to	0.8%
	Meat products	0.0007 - 0.004%
Rennet (Rennin)	Enzyme for curd production in cheese making	
Resin, Acrylamide - acrylic acid	Used in clarifying beet-sugar or cane-sugar juice	
	By weight of juice, up to	0.0005%
Resin, Coumarone-indene	Component of chewing-gum base	
	Protective coating for citrus fruit. Fresh fruit basis, up to	0.02%
Resin, Isobutylene (Polyisobutylene)	Chewing-gum base component	
Resin, Methacrylic and divinyl benzene copolymer of fine particle size, weakly acidic, cation-exchange type	Adsorbent for Vitamin B_{12} in nutritional supplement-type products	
Resin, Petroleum Hydrocarbon, aliphatic (Mol. wt approx. 1,100)	Component of chewing-gum base	

Name	Function, Usage	Levels of Use
Resin, Terpene (Alpha- and beta-pinene)	Chewing-gum base component	
	Coating for fresh fruits and vegetables. Up to	0.02%
	Beta-pinene polymer, moisture barrier on soft gelatin capsules. Per weight of capsule, up to	0.07%
	Same polymer as moisture barrier on powder of ascorbic acid or its salts. Up to	7.0%
Rosins Methyl ester of hydrogenated rosin Glycerin ester of partially hydrogenated wood rosin Glycerin ester of polymerized rosin Hydrogenated rosin polymers of glycerin or pentaerythritol	Components of chewing-gum base	
Rubber, Butadiene Styrene (latex) Rubber, smoked sheet and latex solids (natural)	Chewing-gum base	
Shellac	Candy glaze and polish. Up to	0.4%
Silica Gel (Silicic acid, precipitated)	Anti-caking agent in curing mixes, etc. Up to	0.5%
Silicates	Anti-caking agents	
Silicate, Aluminum Calcium	Table salt. Up to	2.0%
	Vanilla powder. Up to	2.0%
Silicate, Calcium	Table salt. Up to	2.0%
	Baking powder. Up to	5.0%
Silicate, Magnesium	Table salt. Up to	2.0%
	Vanilla powder. Up to	2.0%
Silicate, Sodium Alumino- (Sodium silicoaluminate)	Table salt. Up to	2.0%
	Dried egg yolk. Up to	2.0%
Silicate, Sodium Calcium Alumino- (Sodium calcium silicoaluminate) hydrated	Table salt. Up to	2.0%
Silicate, Tricalcium	Table salt. Up to	2.0%
	Meat dry-curing mixtures	
Silicon Dioxide, colloidal	Free-flowing agent in salt, seasoned salt, sodium bicarbonate. Up to	1.0%
	Vitamin products. Up to	0.5%
	Dietary products. Up to	0.75%
	Spices, meat-curing compounds, and flavoring powders	2.0%
	Dehydrated honey, dehydrated molasses, dehydrated nondiastatic malt. Up to	2.0%
Sodium Sulfate	Component of chewing-gum base	
Sodium Sulfide	Component of chewing-gum base as reaction-control agent	
Sorbitol	Humectant, texturizing agent, sugar-crystallization controller	
	Shredded coconut Dietetic fruit packs and soft drinks Frozen desserts	

Name	Function, Usage	Levels of Use
Sorbitol (cont'd)	Confections	2.2 - 75%
	Baked goods	0.025 - 15%
	Icings and fillings	0.025 - 0.05%
	Meat products	
Sperm Oil, hydrogenated	Release agent or lubricant in baking pans	
Stearate, Calcium	Anti-caking agent	
	Onion and garlic salts	2.0 - 5.0%
	Vanilla powder. Up to	2.0%
Stearate, Magnesium	Anti-caking agent	
	Onion and garlic salts	
	Meat dry-curing mixtures	
	Releasing agent in compressed sugar lozenges	2.0%
Stearate, Sodium	Anti-caking agent, binder, chewing-gum base component	
Stearic Acid	Softener in chewing-gum base	
Talc	Anti-caking agent	
	Added to vitamin supplements to render free-flowing	
Tannic Acid	Clarifying agent	
	Brewing and wine industries. Up to	0.01%
	Refining agent for rendered fats	
Triacetin (Glyceryl triacetate)	Vegetable and fruit coatings	
Trichloroethylene	Solvent	
	Residue in decaffeinated coffee, ground. Up to	0.0025%
	Decaffeinated soluble coffee. Up to	0.001%
	Spice oleoresins. For total chlorinated solvent residues up to	0.003%
Triethanolamine	Component of coating on fruits and vegetables. Up to	0.0002%
Triisopropanolamine	Component of coatings for fresh fruits and vegetables. Up to	2 ppm
Urea	Yeast food	
	Wine production. Up to	2 lbs/1000 gal
Wax, Bee's	See Beeswax	
Wax, Carnauba	Candy glaze and polish. Up to	0.4%
Wax, Microcrystalline and Paraffin (Paraffin)	Component of coating on fresh fruits and vegetables; component of chewing-gum base	
	In matrix formation or external application to vitamin products	
	Coating for certain cheeses	
Wax, Rice Bran	Coating for candy. Up to	0.005%
	Coating for fresh fruits and vegetables. Up to	0.005%
	Plasticizer in chewing gum. Up to	2.5%

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Chemicals used in food
processing